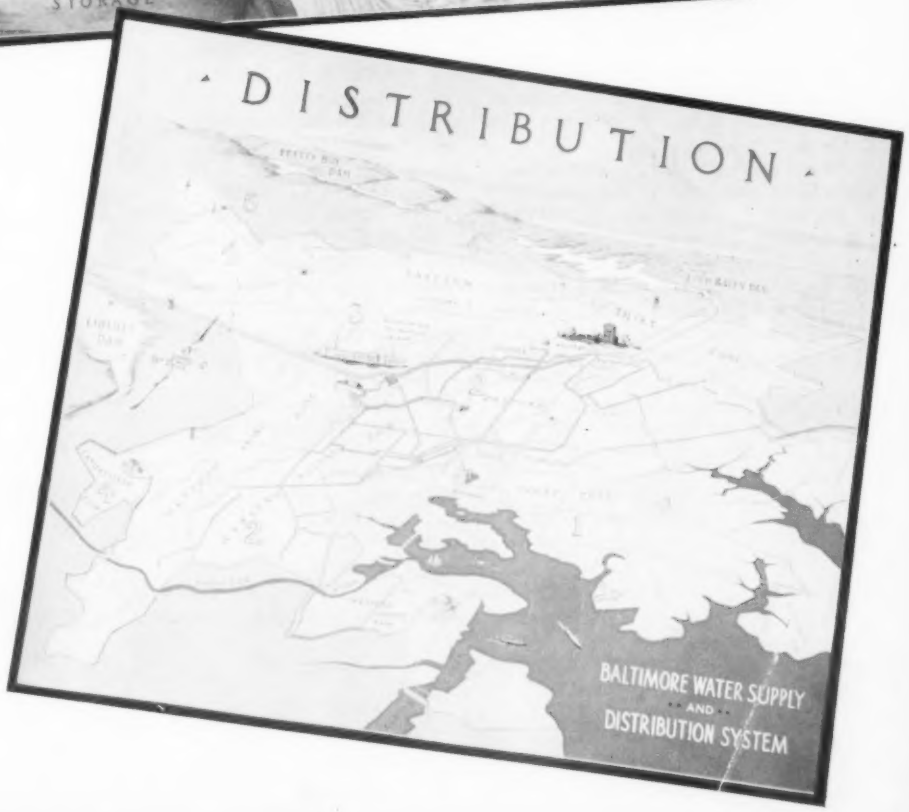
The American City

JULY 1956



MURALS DOMINATE the entrance to Baltimore's new Ashburton water treatment plant. One tells the history of water supply generally; the other shows Baltimorians the extent of their city's water supply system.

See pages 106-109 and 112.

The old surface-treated macadam surface on this Roanoke street provides excellent base for a new two course, hot-mix Texaco Asphaltic Concrete pavement.

Roanoke, Va., paves with Texaco

by the long-range, economical Stage Method

The first major improvement for many Roanoke, Va. streets consists of a well-compacted layer of broken stone, made waterproof and dustless by a surface-treatment of Texaco Rapid-curing Cutback Asphalt.

After serving traffic for a number of years, this pavement provides an excellent base for the next stage in the street's development, illustrated by the photographs. Two courses of durable, plant-mixed Texaco Asphaltic Concrete are laid, first a coarse-graded asphalt leveling course, followed by a fine-aggregate asphalt wearing surface. The result is a street which will serve heavy traffic many additional years with a minimum of upkeep.

Eventually, the pavement may be further strengthened to serve increased traffic by the addition of another layer of plant-mixed Texaco Asphaltic Concrete.

This long-range, economical method of paving city streets with Texaco Asphalt products is recommended to officials of other cities.

Two free booklets which supply municipal officials with helpful information on all types of Asphalt street construction can be obtained by writing our nearest office.

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Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Minneapolis 3 Philadelphia 2 Richmond 19

TEXACO

REG. T. M.

TEXACO ASPHALT

JULY 1956

The American City

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Courtesy and resourcefulness qualify her for the job. Gaye Evans, telephone company Service Representative, obtains information for a customer regarding his telephone service.

PHOTOGRAPHS BY ANSEL ADAMS

She Likes to Help People

A story about one of the telephone Service Representatives whose "voice has the smile" whenever there's anything you'd like to know about telephone service.

One of the nice things about the telephone business is the way it brings us close to people.

Many, many times each day—in your community and in countless communities throughout the land—we have the opportunity and the privilege of friendly contacts with those we serve. Sometimes they are by telephone. Very often they are personal visits.

Among those who have these contacts are Business Office Service Representatives like Gaye (Mrs. Robert) Evans.

"What we like people to do," says Gaye, "is to think of us as their personal representatives at the telephone company. Whenever there's any question about service or a bill or you're moving or needing more service, we're here to help in every way we can."

Gaye Evans' job takes a special type of person. One who is not only efficient but understanding as well.

Gaye qualifies in many ways. Even in her leisure hours, she finds time to help others, especially the handicapped and the needy. Another of her activities is rehearsing a 26-girl choir.

Gaye sums up one of her main satisfactions this way: "It's nice to have people think of the telephone company as a place where they can always find courtesy and consideration. That's our job and we try to be good at it."

Helping the Blind. Raising money to provide "Guide Dogs for the Blind" has been one of Mrs. Evans' activities in the Venture Club—an organization of Oakland (Calif.) business women.

BELL TELEPHONE SYSTEM

Sanitary Fill vs. Incinerators

In the May issue of THE AMERICAN CITY I read with a great deal of interest the article "Incinerators Win In New Orleans," by Carl Schneider, Consulting Engineer of New Orleans. As is to be expected of Carl Schneider, his article shows that he made a very careful and complete cost analysis before recommending a decision.

It is quite possible for the cost of operating a sanitary fill to exceed the cost of operating an incinerator. Only by careful analysis such as Mr. Schneider has made can a true comparison be obtained.

The main factor that is so frequently overlooked in making comparisons of costs between sanitary fills and incinerators is the cost of transportation. It is just as important to include this cost in making a total over-all analysis as to include cost of interest and depreciation on an incinerator.

JEAN L. VINCENZ
Director of Public Works
San Diego, Calif.

Automatic pH Control

As I understand it, the automatic pH control as adopted at the Winston-Salem plant regulates the feeder that applies lime to the filtered water. (See "Winston-Salem Adopts Automatic pH Control," page 101, May 1956 issue.)

Would it not be helpful to regulate the pH value of the water ahead of

the flocculator according to optimum flocculation conditions? This would, of course, vary with the raw water from time to time.

PAUL C. LAUX, *Superintendent*
Division of Water
Columbus, Ohio

All the World Loves a Parking Meter!

Mr. Markman of London, England points out in THE AMERICAN CITY for June that the parking meter idea is taking hold globally. (See "Parking Meters Accepted Globally," p. 5). One of his recent installations of Twin meters was in Tel-Aviv, Israel. Other "far-away" places where our Mi-co parking meters are now being used include Fairbanks, Alaska; Honolulu, Hawaii; Basle, Switzerland; Nogales, Mexico, and just last month we completed an installation of 500 Twin meters in Tiajuana, Mexico. We also were just awarded a contract for 500 of our Mi-co manually operated parking meters by the City of Hermosillo, Sonora, Mexico.

ELMER LUEBBERT, *Manager*
Mi-co Meters Division of
The Michaels Art Bronze Co., Inc.
Erlanger, Ky.

Centralized Municipal Radio

With further regard to my article in the June issue of THE AMERICAN CITY on "Fort Worth's Radio Division," the "centralized" theme in municipal electronic maintenance is the main point in our setup. In fact, centralization is essential to assure maximum utilization of equipment and specialized personnel by all city departments.

Most cities have a police radio crew with limited equipment, a fire radio crew in similar straits, and possibly a utilities radio maintenance man or an outside contractor who gives service only during business hours. By centralization, equipment and skills are pooled, resulting in a better equipped service facility with around-the-clock potentialities. Effective communications can add immeasurably to operating efficiency and conserve budget expenditures while so doing, and a centralized maintenance facility is a major step in improving communications effectiveness.

JORMAN I. KOSKI
Radio Supervisor
Fort Worth, Texas

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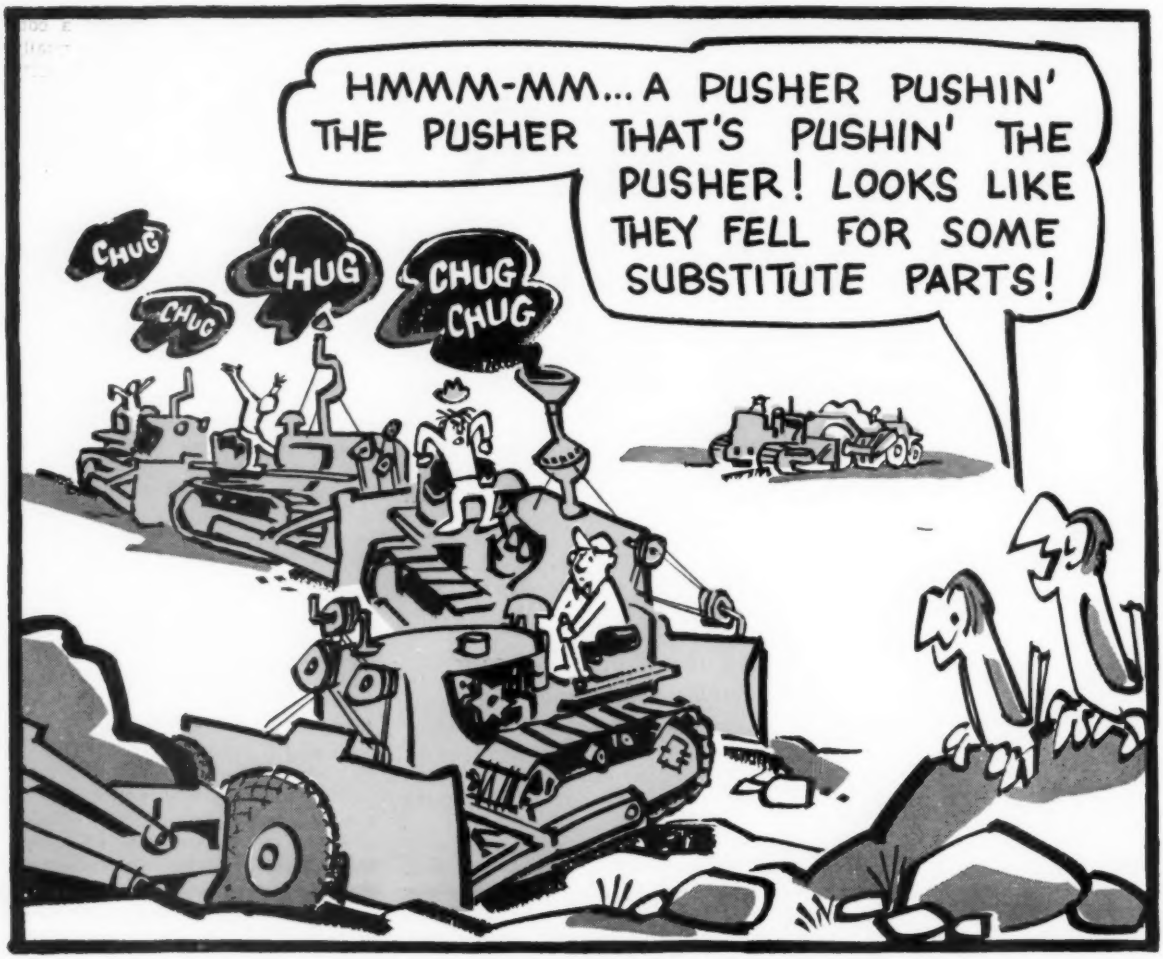


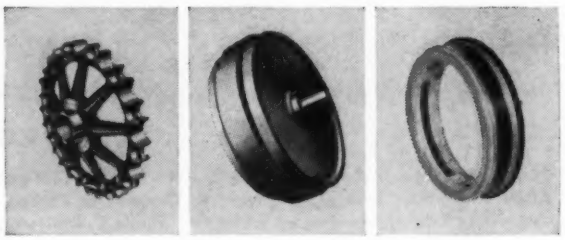
Anybody ever tell you there's no difference in parts?

Take sprockets, for example. Caterpillar *original* sprockets feature *deep-hardened teeth* with tough cores to withstand shock loads. CAT* original idlers have steel disc construction, with steel treads *flame-hardened* for greater wear. Cat bellows seals are of self-aligning face-type design. They help keep lubricant in and dirt out, even on the dustiest job. You're *sure* of new machine performance with original parts like these.

With substitute parts, can you be sure of anything?

Better see your Caterpillar Dealer's Parts Representative—and get Cat original parts every time.

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.



Caterpillar sprockets, idlers and seals are the result of over 50 years of track-type tractor manufacture. So don't be fooled—there is a difference in parts. Why take chances with substitutes?

CATERPILLAR*

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

MAIL BAG *(continued)*

Success Encourages Wichita

In reading W. C. Renshaw's article, "1,000 Feet Up and 25 Miles Away" (THE AMERICAN CITY, June 1956, p. 125) my thoughts were directed toward our project which might be termed: "100 Feet Down and 25 Miles Away."

We have an 11.5 million dollar project currently under construction to supplement the municipal water supply of the City of Wichita. It consists mainly of three parts: the drilling of 20 additional supply wells in the Equus Beds area 25 miles north of Wichita; the construction of a 75-mgd, 66-inch reinforced concrete pipeline; and the expansion of the water treatment plant to a capacity of 84 mgd.

This program was begun in 1953 and has been interrupted and harassed by constant legal actions which have taken the city from the district court of the state to the U. S. Supreme Court. These actions have contested everything from water rights to the state water appropriation law and the constitutionality of the condemnation law under which the city has obtained necessary right-of-way for the new pipeline.

Part of the legal actions arose out of the make-up of the water supply and distribution operations in our city. The distribution system is privately owned, while the water production and treatment facilities are municipally owned.

We take heart when learning the fact that others have been able to persevere through turbulent storms of difficulties and in the end arrive at the port of ample water.

ROBERT H. HESS
Director
Water Supply & Sewage Treatment
Wichita, Kans.

A Good Fly-Control Program

The Beverly Hills fly-control program confirms what most technicians agree is basically needed to make this work successful. (See "War on Flies," page 113, May 1956 issue.) Those who have studied house-fly biology will agree that a good control program is principally sanitation and secondarily chemicals. This is just what Beverly Hills is doing. Until a good sanitation program goes into operation, all the chemicals in the world are not going to cut down the fly population to keep them from being a nuisance and a potential health hazard.

WILLIAM F. RAPP, JR.
Scientist
State Department of Health
Lincoln, Nebr.

Overcoming Apathy in Local Civil Defense Programs

A diversified municipal civil defense program consisting of a broad variety of activities will attract at least 1% of the local population into volunteer service.

This has been my experience in the City of Evanston, Ill., where I have found that a many-sided CD program is the only way to overcome community apathy toward civil defense. I have found, for example, that many women and young people who do not care to serve as wardens can be interested in the Ground Observer Corps. Recently, the GOC proved its effectiveness in watching for unknown planes in our area in a series of tests. The Corps also gave significant help in the spring tornadoes which tore through communities in central Michigan.

Many high school and even college young men are radio hams, who can be interested in joining the communications divisions of a local civil defense set-up. Still other young men are interested in auxiliary police work and can be drawn into this phase of CD.

Even city officials are sometimes selective about their interests in civil defense. One official said to me recently, "I am getting too old to be worried about the H-bomb. If it comes, all right. But I am interested in disaster-relief programs because with ever larger communities in the country natural holocausts like floods, tornadoes, and hurricanes can bring terrible miseries to more and more people."

Thus, by emphasizing all phases of civil defense, you can secure an active and dependable minority of volunteers who are really interested in civil defense. Such a group can make a worthwhile nucleus upon which to build a larger program.

EDDY S. BRANDT
Civil Defense Director
Evanston, Ill.

Extra Landfill Dividend

When City Engineer Bowman chalked up the assets that his new sanitary fill is bringing to Shelbyville, Ind., he should have added another important one that never should be forgotten. (See "We Buried Our Complaints With the Refuse," June, pp. 150-152).

One of the biggest and most satisfying of extra dividends is the reclaimed land that otherwise is waste and often is a nuisance and an actual hazard. The fill turns these into parks, recreation areas, utility and often city beauty spots. The added value that this reclamation brings a city often pays for the cost of the operation by itself.

V. A. BASGALL
City Manager
Junction City, Kans.

How Much for Street Lighting?

I am in need of information pertaining to the amount of money per resident that a municipality should pay out for street lighting. This could be slated as a dollar-per-year figure or as a percentage of the annual budget.

KELLY HALE
Distribution Engineer
Black Hills Power and Light Co.
Rapid City, S. Dak.

Fire Prevention at New Kensington, Pa.

Our city is in the process of revamping its Fire Department, with the following in mind:

1. Change location of fire stations because of shift of population from one area of the city to another in order to free vacated sites for other municipal purposes.
2. Appraisal of our alarm system.
3. Appraisal of our fire equipment.

We need the names of four or five firms which specialize in this type of work and the names of some of the communities they have served.

We have already had an over-all zoning and planning program compiled. This dealt more in land use than departmental studies. Consequently, we are not in need of any other service at this time—only an examination and re-appraisal of our Fire Department efficiency.

ELISABETH S. BLISSELL
Executive Director
Chamber of Commerce
New Kensington, Pa.

a little HTH* goes a long way in sanitizing new water mains

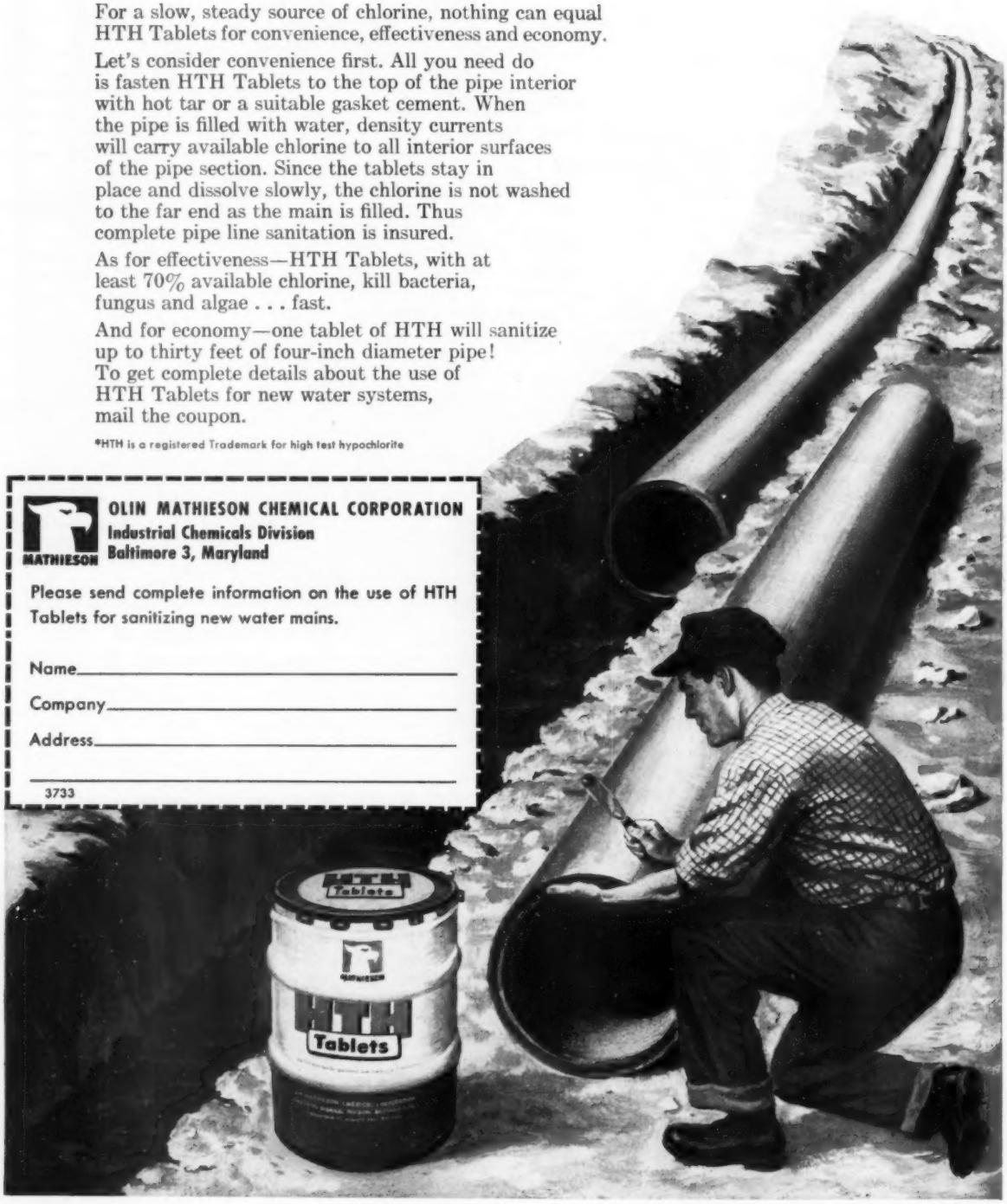
For a slow, steady source of chlorine, nothing can equal HTH Tablets for convenience, effectiveness and economy.

Let's consider convenience first. All you need do is fasten HTH Tablets to the top of the pipe interior with hot tar or a suitable gasket cement. When the pipe is filled with water, density currents will carry available chlorine to all interior surfaces of the pipe section. Since the tablets stay in place and dissolve slowly, the chlorine is not washed to the far end as the main is filled. Thus complete pipe line sanitation is insured.

As for effectiveness—HTH Tablets, with at least 70% available chlorine, kill bacteria, fungus and algae . . . fast.

And for economy—one tablet of HTH will sanitize up to thirty feet of four-inch diameter pipe! To get complete details about the use of HTH Tablets for new water systems, mail the coupon.

*HTH is a registered Trademark for high test hypochlorite



MATHIESON

OLIN MATHIESON CHEMICAL CORPORATION
Industrial Chemicals Division
Baltimore 3, Maryland

Please send complete information on the use of HTH Tablets for sanitizing new water mains.

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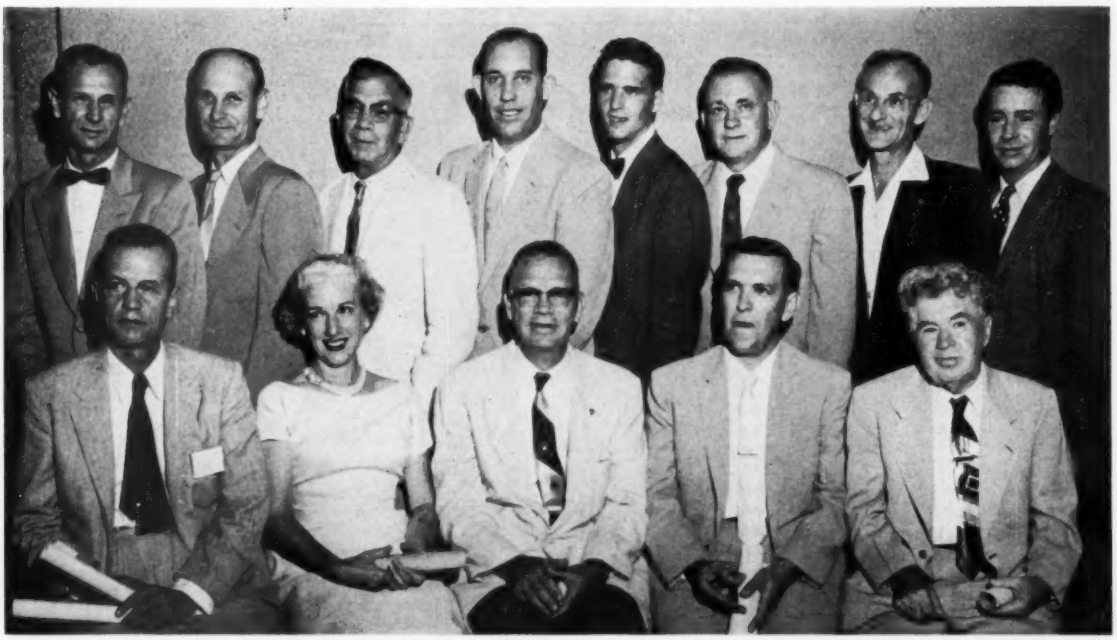
3733

Sewerage and Sewage Treatment

Florida Honors Leaders in Water and Sewage Works Fields



Florida's finest water- and sewage-works operators include (front row, left to right): C. R. Henry, Chief Chemist, Department of Water and Sewers, Miami; Eleanor A. Flanigan, Technician, Water Department, West Palm Beach; David B. Lee, Director, Bureau of Sanitary Engineering, Florida State Board of Health; R. E. Simon, Superintendent of Orlando Sewage Treatment Plant; and Thomas Paul, Chemist and Chief Operator, Water Treatment Plant, Bradenton. Those in the back row are: John B. Sellers, Superintendent Water Treatment, Vero Beach; Eldon L. Holoubek, Water Plant Operator, U. S. Sugar Corp., Clewiston; D. J. Raye, Superintendent, Sewage Treatment Plant, Clearwater; C. M. Courson, Superintendent, Sewage Treatment Plant, Tampa; G. E. Cook, Chief Operator, Sewage Treatment Plant, Panama City; S. P. Robinson, Superintendent, Sewage Treatment Plant, Lake Wales; J. S. Whitney, Superintendent, Community Utilities Corp., Miami; and W. H. Case, Superintendent, Sewage Treatment Plant, Winter Haven.

THE Florida State Board of Health has cited 13 of Florida's more than 500 water and sewage plants for outstanding operation during the past year.

David B. Lee, Director of the Bureau of Sanitary Engineering, Florida State Board of Health, presented awards to the state's top operators at the 24th annual Water Supply and Sewerage Short School and Conference, which was held at the University of Florida the week of May 28, 1956.

Heading the list of award winners were:

Jack Whitney, superintendent of the Community Utilities Corporation, of the West Coral Way area, a subdivision near Miami, who received a water plant award for the best primary treatment plant serving cities under 10,000 population, and a sewage plant award for the best activated sludge plant serving cities under 10,000 population. The Community Utilities Corporation was the only double winner.

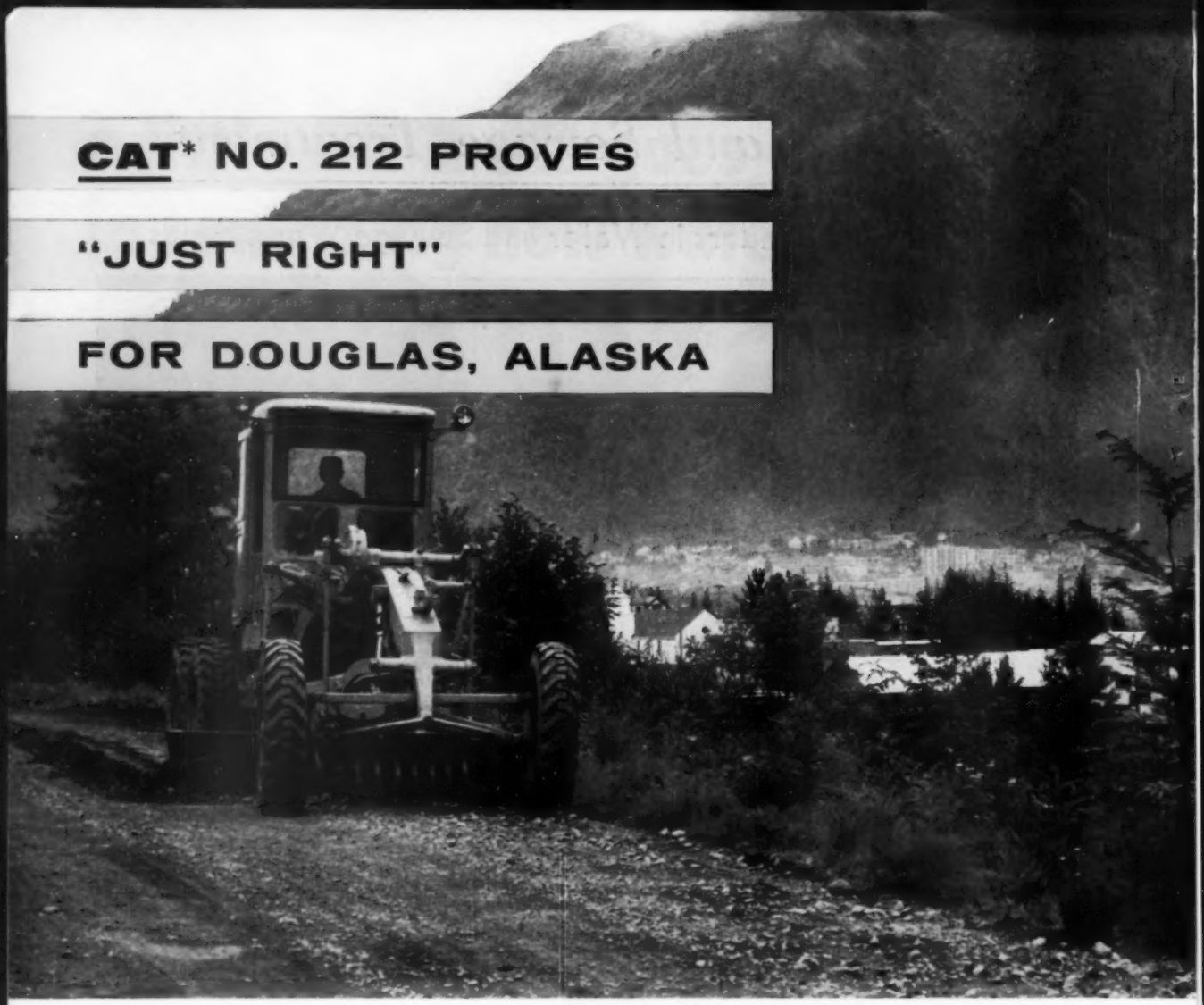
Thomas Paul, superintendent of the Bradenton Water Works, recipient of a water plant award for the best filtration plant serving cities of 10,000-25,000 population. This is the fifth year in which Superintendent Paul has received the top citation in his category.

Eleanor A. Flanigan, chemist-technician for the West Palm Beach Water Works, who received a water plant award for the best filtration plant serving cities over 25,000 population. Miss Flanigan is the first woman to receive a Board of Health award.

Other water plant winners included: Eldon L. Holoubek of the U. S. Sugar Corporation Plant serving Clewiston, for the best filtration plant serving cities under 10,000 population; John B. Sellers, of the Vero Beach Water Work, for the best lime-soda ash softening plant serving cities under 10,000 population; Clarence Henry, Chief Chemist, Miami Water Department, and W. L. Black, Hialeah Water Plant Superintendent, who were joint award winners for the best lime-soda ash softening plant serving cities over 25,000 population.

Sewage plant award winners included: Robert E. Simon, Orlando Sewage Plant, for the best over-all operation; George Cook, Panama City Sewage Plant, for the best trickling filter plant serving cities over 10,000 population; Sam Robinson, Lake Wales Sewage Plant, for the best trickling filter plant serving cities under 10,000 population; D. Joe Raye, Skycrest Plant, Clearwater, for the best activated sludge plant serving cities over 10,000 population; and Bill Case, Winter Haven Sewage Plant, for the best primary plant serving cities under 10,000 population.

No awards were made in more than half the operational categories listed by the Board of Health because plants did not meet all the requirements.



CAT* NO. 212 PROVES "JUST RIGHT" FOR DOUGLAS, ALASKA

As in many other communities, from Alaska to Florida, the Caterpillar No. 212 Motor Grader has given the City of Douglas exactly what it needs.

Against the rugged backdrop of Mt. Juneau, the machine is shown here maintaining Douglas' Fifth Street. A. J. Balog, Superintendent of Streets, says:

"Our No. 212 is just the size we wanted and fits our requirements perfectly. It steers and handles easily and will do all-purpose work. We cut banks and ditches, maintain two miles of gravel street and one mile of the black-topped main street. In winter we get drifts three to four feet deep, and we use the snow plow attachment to clear the roads. All in all we're sure pleased with our No. 212 Motor Grader."

In choosing the machine the city looked for two things. They wanted the versatility that would do any job well, and the local service they knew they would get from their Caterpillar Dealer.

The No. 212, with its dependable four-cycle, 50 HP Cat Diesel Engine, is a well-balanced grader, capable of doing just about anything the larger machines can do, but at slightly slower speeds. Ease of control, good job visibility and accurate blade positioning without leaving the cab are features praised by operators. Like all new Caterpillar Motor Graders, the No. 212 now has tubeless tires, eliminating costly tube and flap trouble and reducing tire down time by as much as 80%.

Get an on-the-job demonstration today from your Caterpillar Dealer and find out how this machine, backed by his excellent parts and service facilities, can save money for your taxpayers.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

99% OF ALL CAT MOTOR GRADERS EVER BUILT ARE STILL AT WORK

Street Construction & Maintenance

The Shoulder Is Important

GOOD streets require good maintenance, and that includes the shoulder too. In Rupert, Idaho, the residential streets are about 50 feet wide, but only the center section, about 30 feet wide, is hard surfaced. The shoulders are gravel and require frequent grading to meet the standard set by the hard-surfaced portion.

An Allis-Chalmers Model D motor grader makes easy work of shoulder maintenance. The Model D grader moves material away from the curb on the initial pass and subsequently smooths it off in three passes to finish the job.

The grader is in constant use, doing street work or alley grading and oiling. It is also used for work on terraces, parking lots, and other grading jobs that might turn up.

G. L. Acock is Mayor of Rupert and R. D. Armstrong is the city engineer.

Material is moved away from the curb on the initial pass of the Model D grader. Three more passes and the job is done.

Not all streets have curbs, but shoulders are maintained on these streets. Note hard surface on traffic portion of street.

Big Scraper Pays Off in a Little City

HARTWELL, Ga. (population 4,000) is ready to prove that big equipment means better streets, better sanitary fills, and lower annual budget appropriations, even in a little city.

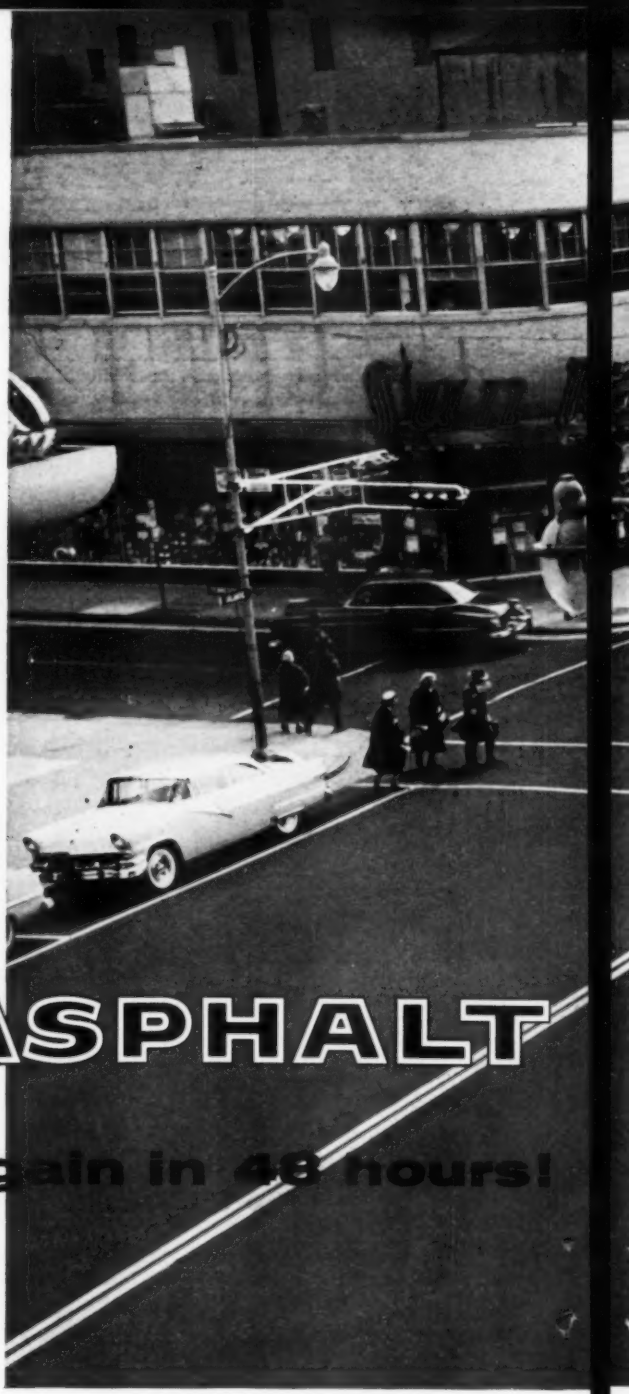
Early this year Mayor Lee E. Carter and his city council purchased a Caterpillar D6 crawler tractor with a pan-type scraper. Now Superintendent Sloan Wellborn can build new streets and still have ample time to keep the sanitary fill in tip-top shape. The big tractor supplements other rather substantial equipment owned by the city. This includes a Caterpillar grader, a front-end loader, and four trucks. The department has nine men employed fulltime on street and refuse collection work.

Left. **The big crawler tractor and pan scraper bring a load of cover material to the sanitary fill site.**

Right. **This patrol grader can team up with the tractor to help in the street construction work.**

"Asphalt proved economical... for Atlantic City's growing traffic loads," says Major William F. Casey, Public Works Commissioner, Atlantic City

"Asphaltic pavement permitted excellent construction speed," says Mr. George Swinton, City Engineer, Atlantic City



Repaved with ASPHALT

Traffic rolls again in 48 hours!

Atlantic City renews main artery with minimum business loss . . . 3 blocks at a time every 2 days

Asphalt construction is the speediest way to repave.

George Swinton, City Engineer of Atlantic City, does it three blocks at a time . . . based on a laying rate of 1200 tons/day. Like this:

First Day . . . barricade three blocks; jackhammer out worn portions of old paving; fill holes, burn; apply tack coat; lay and roll a 2″ asphalt fine-aggregate base; start laying 1½″ asphalt wearing surface.

Second Day . . . finish to grade; paint traffic markings; organize equipment and materials for next day's start; open section to traffic.

Using this fast-moving asphalt method, the city repaved its famed 3.1-mile Atlantic Avenue (see photo) weeks ahead of both schedule completion date and resort season. Furthermore, interruption to the business of Atlantic Avenue merchants was scarcely more serious than that of a rainy day.

What's more, with asphalt, cost was low . . . as Mr. Casey, the city's Public Works Commissioner, indicates above. Low first cost. Reduced "mortgage" on future taxes, too. For asphalt is a minimum-maintenance pavement. Smooth. Resilient. Tough. Good for years. Lends itself well to patching after utility tear-ups.

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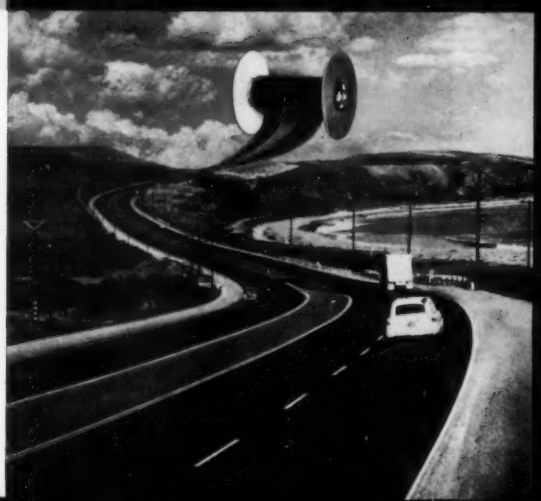

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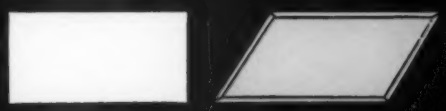
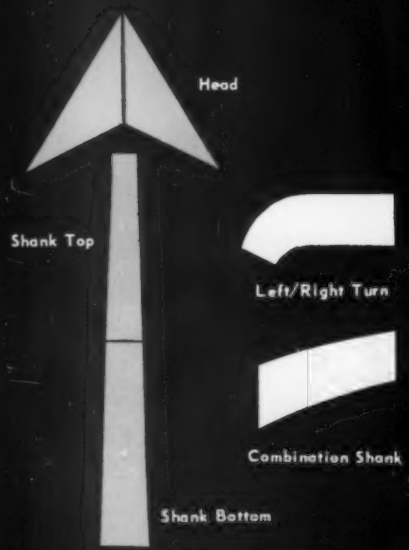


TRAFFIC MARKERS



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TUSCUMBIA, ALABAMA

Parks & Playgrounds

Edited by JOSEPH PRENDERGAST, Executive Director, National Recreation Association

Ice Skating Rink Doubles as Summer Air Conditioner

By GERALD RADERSTORF, *Superintendent of Recreation, Oak Park, Mich.*

OAK PARK will put to double use the refrigeration equipment that freezes its artificial ice skating rink. Besides keeping the ice hard on the rink, which is among the largest municipal skating areas in the country, its four 50-hp electric motors and four freon compressors will provide summer air conditioning for an adjoining community house and library that are proposed.

The rink, which will use 3,000 gallons of brine flowing through nine miles of plastic pipe, cost $85,000 to build in this 28,000-person community. It can handle 500 skaters at one time without being crowded, while spectator space has been provided for over 2,000 persons. A roomy shelter building, which has been constructed of native Michigan white cedar, is approximately 90 feet by 30 feet in area. It houses the refrigeration equipment, skate changing area, checking room, a concession, a guard and first-aid room, ticket office, and rest rooms.

To conserve water in operating the refrigeration equipment, two evaporative condensers have been installed in the system. Each motor and condenser forms an independent unit with its own brine chiller so that refrigeration can be stepped up or curtailed as the weather changes. Electricity used in one day's operation of the system could serve the needs of an average home for three months.

Personnel from almost every city department participated in developing the skating area, which is the first completed project included in an $890,000 bond issue passed in April 1955 to finance a broad expansion of Oak Park's recreation facilities. Admission charges to the rink will be designed only to defray its operating costs.

City Officials Cited for Park and Playground Development

MAYORS, city councilmen, and members of park boards were among the 160 civic leaders who received citations in June from the National Recreation Association for their contributions to local park and playground development. The awards were featured in municipal observances of National Recreation Month last month. Among the local officials cited were:

Mayor Richard C. Lee, New Haven, Conn. During his first two years in office, Mayor Lee sponsored an expanded program of park development that resulted in more money being spent for more playgrounds, more equipment, and more supervisors than in any previous period in the city's history. In the first of these two years, four new paved playgrounds were established, three new Little League fields were constructed, and improvements were made to 27 other athletic fields.

The citation from the Association read in part:

You have recognized public recreation as one of the municipal services of major importance and you have given it excellent support. You have made outstanding contributions to the community recreation movement in New Haven both as mayor of the city and as a lay citizen.

Councilwoman Audra E. Francis, Saginaw, Mich. During the past year as chairman of the Saginaw city council's recreation committee, Mrs. Francis spearheaded moves that resulted in the construction of an $18,000 field house, the acquisition and development of an entirely new playground and playfield, and the purchase of additionaal playground equipment at a number of city parks.

The election in 1953 of Mrs. Francis to the council in this city of close to 100,000 persons climaxed a period of 20 years during which she worked actively for better local park and playground facilities.

Mayor Joseph Longfield, Hanford, Calif. Mayor Longfield for a number of years served as a member of the city council and as ex-officio member of the recreation commission. During his tenure two indoor recreation buildings were built, one of which was dedicated as The Longfield Recreation Center.

His citation read in part:

Your boundless, long-time interest in youth and your selfless enthusiasm for their welfare have inspired Hanford to provide these two new buildings in less than two years. Hanford is a fine place in which to live because of your personal influence and effort, so willingly given.

Hall Nichols, Wellesley, Mass. A member of the Wellesley Park and Recreation Commission, Mr. Nichols is Director of Building Construction for the Commission of Administration and Finance of the State of Massachusetts.

As an engineer, Mr. Nichols was largely responsible for the sound planning and careful construction of almost all of the town's park and playground facilities. He has served continuously on the local park and recreation commission since 1945.

Judge William S. Fort, Springfield, Ore. A Circuit Court Judge for the State of Oregon, Judge Fort was instrumental in establishing the Williamalane Park and Recreation District for the Springfield area. He prepared and secured the adoption of the state enabling legislation which led to the establishment of several additional park districts in the state.

His citation read in part:

Your skilled leadership made others aware of the need of park facilities in Williamalane. For eight years as attorney without fee for the District, you gave needed guidance and encouragement to the Board of Directors.

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Our Municipal Notebook

Boundaries Blamed for City Financial Problems

MEETING in Washington last month, more than 1,300 members of the Municipal Finance Officers Association heard present-day municipal boundaries attacked as barriers preventing solutions to many local financial problems. The four-day meeting, which celebrated the MFOA's 50th birthday, also heard discussions of means of reducing governmental costs, new techniques in municipal accounting and auditing, public retirement fund administration, and the organization of local finance departments.

George S. Mooney, executive director of the Canadian Federation of Mayors and Municipalities, predicted that by 1980 municipalities in metropolitan regions will be unable to finance their governmental responsibilities because of the uneven distribution of taxable wealth created by local boundaries. Mr. Mooney asserted that this situation would prevail despite the fact that metropolitan regions as a whole have within them sufficient taxable resources to cover the combined expenditure needs of all the component municipalities.

Underscoring Mr. Mooney's prediction, Mabel S. Walker, executive director of the Tax Institute, Inc., Princeton, N. J., noted that serious financial dislocations resulting from arbitrary boundaries are taking place in suburban areas where planned industrial parks and shopping centers are being built.

When such units move in, Miss Walker asserted, "governmental expenditures in all the communities in the area may be expected to increase rapidly. Governmental revenues may also be expected to increase substantially. But often the employees of such industrial or commercial areas live in municipalities other than that in which their work place is located. Since the employees and their families will be responsible for a large part of the added costs, the resulting governmental burdens and revenues will not take place in the same governmental unit."

Miss Walker also pointed out that the shift away from municipal property taxes to a greater and greater dependence on nonproperty taxes (and especially local income taxes) is an attempt by municipalities to reach beyond their borders to tap the commuters who create daytime demands for local services but live and pay taxes in other municipalities. Miss Walker predicted a growing use of such nonproperty taxes in the coming decades unless boundaries could be rationalized.

Grants-In-Aid Condemned and Praised

A. A. Weinberg, retiring president of MFOA, concurred that new nonproperty taxes would become a revenue pattern in the future. However, he condemned federal grants-in-aid as a municipal revenue source, claiming that they have "a debilitating effect on local government." This feeling was not shared by Canadian speakers, among them George D. Iliffe, Comptroller General of the Province of Manitoba, who noted that in both Canada and the United States there has been a "general acceptance of the principle that grants-in-aids are essential to a well-planned program of intergovernmental financial relations." Mr. Iliffe predicted that the future would see a "continued use of properly planned grants-in-aid as the most effective medium for implementing intergovernmental arrangements."

During the business session of the meeting, Charles L. Mathews, Deputy Municipal Revenue Collector, Atlanta, Ga., was elected president of the Association. Will Gibson, City Auditor of Portland, Ore., was chosen to receive the Association's Louisville Award, an annual presentation for exceptional individual accomplishment in the field of public finance administration. Mr. Gibson received the award, a gold medal, for producing a practical manual on centralized microfilming procedures for municipalities. A silver medal was presented to W. Barton Avery, former city manager and director of finance of Manhattan, Kans., for his carefully documented reports on the planning and financing of a new municipal center in the Kansas community.

Zeckendorf Eyes Profits in Building New Towns and Rebuilding Old Cities

THE DEVELOPMENT of entirely new towns in rapidly growing areas of the country and the redevelopment of blighted areas in older cities offer "enormous" potentials to private real estate firms, according to William Zeckendorf, president of Webb and Knapp, Inc., nationally known real estate company.

In declaring that there is a growing market for new town development in various parts of the country, Mr. Zeckendorf announced last month that he had purchased 36,000 acres of strategically located land in the New Orleans area for the construction, in entire community units, of extensive industrial and residential areas.

New Orleans Area Has Rising Potentials

Mr. Zeckendorf stated that he had decided to invest in New Orleans because it is the principal gateway to the United States from the rapidly developing Caribbean and Central American countries. Expansion in raw material production in these countries has increased the industrial potentials of New Orleans, he indicated.

Control of the extensive acreage, which is divided among five major tracts, was obtained through the outright purchase of Godchaux Sugars, Inc., a major cane sugar refiner in the Gulf Coast area. Mr. Zeckendorf explained that purchase of the company does not mean that Webb and Knapp will now be in the sugar refining business. Instead, the real estate company has arranged to sell the refining mills and equipment of the Godchaux organization to the National Sugar Refining Company. However, Webb and Knapp will develop new industries and residential areas on the lands on which sugar cane had been grown.

While expressing his growing interest in new town development, Mr. Zeckendorf announced that Webb and Knapp will make greater investments in urban redevelopment in the future. He said to stockholders of the company, "Your company feels that it stands at the threshold of a great national renaissance in this

field and believes itself to be pre-eminently qualified to take advantage of the opportunities presented thereby."

The opportunities for profit in the redevelopment field lie in the ability to acquire large acreages of substandard but well located urban land at substandard prices, Mr. Zeckendorf explained. Low prices for blighted land are possible primarily because of federal financial aids made available to city redevelopment agencies for slum clearance programs. However, federal aids are not always necessary to make urban redevelopment attractive to private real estate firms, according to Mr. Zeckendorf. The purchase of large areas of residential slums and the replacement of such uses with modern business areas will create rises in the valuations of surrounding properties sufficient to more than pay for the original investments. It is this rise in property valuations, referred to as incremental profits by Mr. Zeckendorf, and not the builder's profits that draw real estate firms into the redevelopment field. The Webb and Knapp firm is currently taking steps to redevelop a large area of residential slums in Washington, D. C. The company is also studying the possibilities of redeveloping 40 acres of land near the Pennsylvania Station in New York City.

Hi-Fi Citizens

JUVENILE "nondelinquents," unnamed in the past, and representing about 98% of all teenagers, now have any of 15 sparkling labels to use. They were selected by contest in Modesto, Calif., after the city council declared itself "sick and tired of hearing about that 2%."

Topping the competition was the entry by 14-year-old Dianne Storch, who received a wristwatch for her sweepstake suggestion, "HI-FI's." Other first prize awards were: Juvenile Honorees, Topteens, Team-Agers, and Goal Getters. Each of these won a record player.

Second prizes, $25 merchandise orders, were given for: Societeens, Keen Teens, Beacons, Digniteens, and Juvenile Achievers. Third prizes, either a tennis racket or a $20 jewelry merchandise order, were awarded for: The Juvenescent Citizen, Teentops, Merits, TNT's (Today's Needed Teenagers), and Civil Teens. In addition, 40 others received certificate-winning honorable mentions.

The awards were presented during Modesto's annual Youth in Government Day, May 16, when Mayor Harry Marks, the city council, and City Manager Ross Miller surrender their posts to let the young people run it for the day.

Mayor Receives Engineers Club Medal

MAYOR Raymond R. Tucker of St. Louis, Mo., was recently awarded the achievement award presented annually by the Engineers' Club of St. Louis. It recognizes his accomplishments in scientific research, education and promotion of the public welfare. Mayor Tucker formerly headed the Department of Mechanical Engineering, Washington University, before he took office in 1953.

Four Metropolitan Areas Lead U. S. Population Gains

THE METROPOLITAN areas of Washington, Houston, Milwaukee, and St. Louis have led the country in population growth since 1950, according to a recent Census Bureau report prepared for the Federal Civil Defense Administration. The figures covered the six years to April 1.

Greater Washington, including its Maryland and Virginia suburbs, topped the list. In the last regular census its population stood at 1,464,089, while on April 1, its estimated population was 1,884,000 — a 28.7% increase. In the same period, the United States population had increased by 10.3% from 151,132,000 to 167,444,000.

Greater Houston, for the first time, went over the 1,000,000 mark with a 33% population rise. In 1950 its population was 806,701. On April 1 its estimated population was 1,077,000.

Greater Milwaukee added another 104,000 to its population, and the April figure was put at 975,000. The city's gain was 11.5% while that of the suburbs was 13%. On the other hand, the City of St. Louis lost 16,000 but its outlying areas reported a population rise of 27.5%, thus boosting the population count from 1,681,281 to 1,892,000.

In each case the population growth in the suburban area was far greater than in the central area.

Plan Small Scattered Housing Projects, PHA Advises

BIG CITIES across the nation, with support from the federal Public Housing Administration, are experimenting with small scattered public housing units instead of large concentrated sites. Charles E. Slusser, commissioner of the PHA, announced in a recent issue of the *Journal of Housing* that the administration has inaugurated "a new policy that not only permits but encourages the use of small scattered sites."

The New York City Housing Authority, with the backing of Herman D. Hillman, director of the PHA regional office in the city, has plans for the erection of 8,000 small housing units, calling for the development of one block, half-, and quarter-blocks, and even single buildings. Mr. Hillman has told the 150 housing authorities under his jurisdiction that smaller projects would (1) not need new shops, streets, and other facilities required by larger ones, and (2) help prevent the concentration in single areas of low-income groups.

Both Philadelphia, Pa., and San Antonio, Texas have plans to rehabilitate blighted areas with scattered small public housing projects. San Antonio will build two-, three-, and four-unit row houses or duplexes on individual scattered lots, while Philadelphia has planned housing projects of from 20 to 200 units for 21 sites.

Other cities having similar plans are Syracuse, N. Y., and Chicago, Ill. Syracuse is planning a state aided project of 190 units on a series of small sites near the center of the city. Chicago has 3,250 public housing units planned for 11 sites ranging from two to 30 acres.

Underground CD Center to House City Government

PORTLAND, Ore., will soon complete an underground civil defense control center which will house its city government in times of enemy attack or other emergencies. The shelter, according to an April issue of *Engineering News-Record*, consists of a 26-inch-thick concrete arch spanning an area 84 feet in width. When finished, the tunnel-like building will have cost $500,000.

The entire structure will be the

G-E Type V Vehicle-Actuated Controller

Varies timing to suit traffic— gets more "GO" at main intersections

Signal interval accessories for every need

1. Actuated timer for spasmodic left turns against traffic.

2. Non-actuated timer for consistent left turns.

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No other controller of this type goes beyond detecting a demand on the actuated phase as does the G-E vehicle-actuated Type V. It not only counts cars but also varies timing according to count—and adjusts more effectively to traffic demands as a result.

YET THIS CONTROLLER shares with other G-E units the benefits of easy and fast maintenance gained from its simple, unitized construction and liberal use of convenient jack-mounting. And your traffic-control distributor can easily furnish standard replacement parts without waiting for special units.

IN ELECTRO-MECHANICAL UNITS, G. E.'s vehicle-actuated Type W offers performance superior to any in its field. No other controller of its kind has so few components.

FOR THE FULL STORY on these new controllers, both full- and semi-vehicle-actuated, and accessories, contact your authorized G-E traffic distributor or Apparatus Sales Office, or write Section 453-69, General Electric Company, Schenectady 5, New York.

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nerve center of the Portland metropolitan area in times of disaster. A completely self-contained unit, it will house, if necessary, 300 people for a week with no one entering or leaving the unit. It will accommodate the full activities of Portland's city government and serve as headquarters for all rehabilitation and rescue work. Full provisions are made for police, fire, engineering, welfare, warden, and other headquarters services. There is also space for liaison with state, military, and county authorities and for the press and Conelrad radio.

The space enclosed by the arched building is 140 feet long. A second floor, measuring 85 feet in length, is provided. The structure is equipped with television facilities for identifying incoming personnel and automatic standby generators which will provide power, if outside power sources should fail.

A filter system will purify incoming air, which might be contaminated with radioactive particles or biological or chemical agents. If necessary, the entire building can be sealed-off and used air will be recirculated after it is freshened through activated carbon filters.

The project has taken three years of planning. Jack Lowe, director of Portland's Bureau of Disaster Relief and Civil Defense, is responsible for its development under Mayor Fred L. Peterson.

Auto Exhaust Accused For L. A. Smog

THE MORE Los Angeles digs into the matter, the more guilt seems directed toward automobile exhaust for creating the nation's biggest smog problem. The latest accusation comes from the Air Pollution Foundation in its Report #13. This is a study of the movement of polluted air in the Los Angeles basin.

This study shows rather clearly that a large proportion of the polluted air does not pass near areas of heavy refining or other industrial activity. Most of the time, particularly on smoggy days, the air from the refineries is never carried into the western and northern portion of the Basin where the smog problem was particularly acute. Because of the large number of trajectories made by polluted air remote from refineries and other industry, some other source appears to be responsible. The fact that most of the trajectories of polluted air pass over regions of heavy traffic points to vehicular exhaust as a major contributor. This conclusion, the Foundation points out, is supported by estimates of the quantities of hydrocarbons, other organics, and oxides of nitrogen coming from exhausts.

The report, however, does not conclude that exhaust gas is the complete explanation for the smog problem. Air from refineries and industries does reach certain residential and commercial sections, and undoubtedly contributes to the pollution problems there.

A copy of this report can be obtained from Dr. Lauren B. Hitchcock, president and managing director, Air Pollution Foundation, 704 South Spring St., Los Angeles 14, Calif.

Orin Nolting Assumes Executive Directorship Of ICMA

Orin F. Nolting

ORIN F. NOLTING, assistant director of the International City Managers' Association for the past 27 years, became executive director of the Association on July 1. He succeeded Clarence E. Ridley, who has been executive director of the Association since 1929 and who retired on June 30.

According to Russell E. McClure, president of the Association, Mr. Nolting's promotion to the directorship was decided by unanimous action of the 16-member ICMA executive board last March. Commenting on the change, Mr. McClure recently said, "Mr. Nolting's career with the Association parallels that of Mr. Ridley. Their excellent teamwork has been one of the reasons for the outstanding progress of the organization.

Background

"With his supervision of the research and publication activities of the ICMA, Mr. Nolting is recognized for his thoroughness and his keen analytical ability. For more than 30 years he has been dedicated to improving local government, and he believes that the ICMA offers the best opportunity for achieving this goal. With his extensive background in this field, he quickly recognizes significant new ideas and encourages their development into practical operating procedures."

Mr. Nolting received an A.B. degree in political science from the University of Kansas in 1926 and a master's degree in public administration from Syracuse University in 1929. He is author of numerous special reports and articles in the field of municipal administration. In addition to his Association work, he is secretary of the National Committee on Urban Transportation, which was created in 1954.

Before joining the Association's staff in 1929, Mr. Nolting had been secretary of the Municipal Reference Bureau at the University of Kansas, and during the time he attended Syracuse University he was a teaching fellow in American government and secretary of the Municipal Research Commission.

ICMA

With the steady growth of the council-manager plan, the ICMA, under Mr. Nolting's leadership will assume added responsibilities and continue to broaden its field of service. Its training materials will be constantly revised to include the most recent developments, its annual conferences will keep in tune with the needs of its members, the information services will contain the practical solutions to management problems in all sizes of cities, and the publications will be subject to critical review and revision for improved presentations of the best management methods.

WHEN TAPPING WAS AN ART

Gone are the days when it took an unerring eye and a mighty wallop to tap a keg of beer. Gone, too, are the days when tapping concrete pipe under pressure was a complex, difficult operation.

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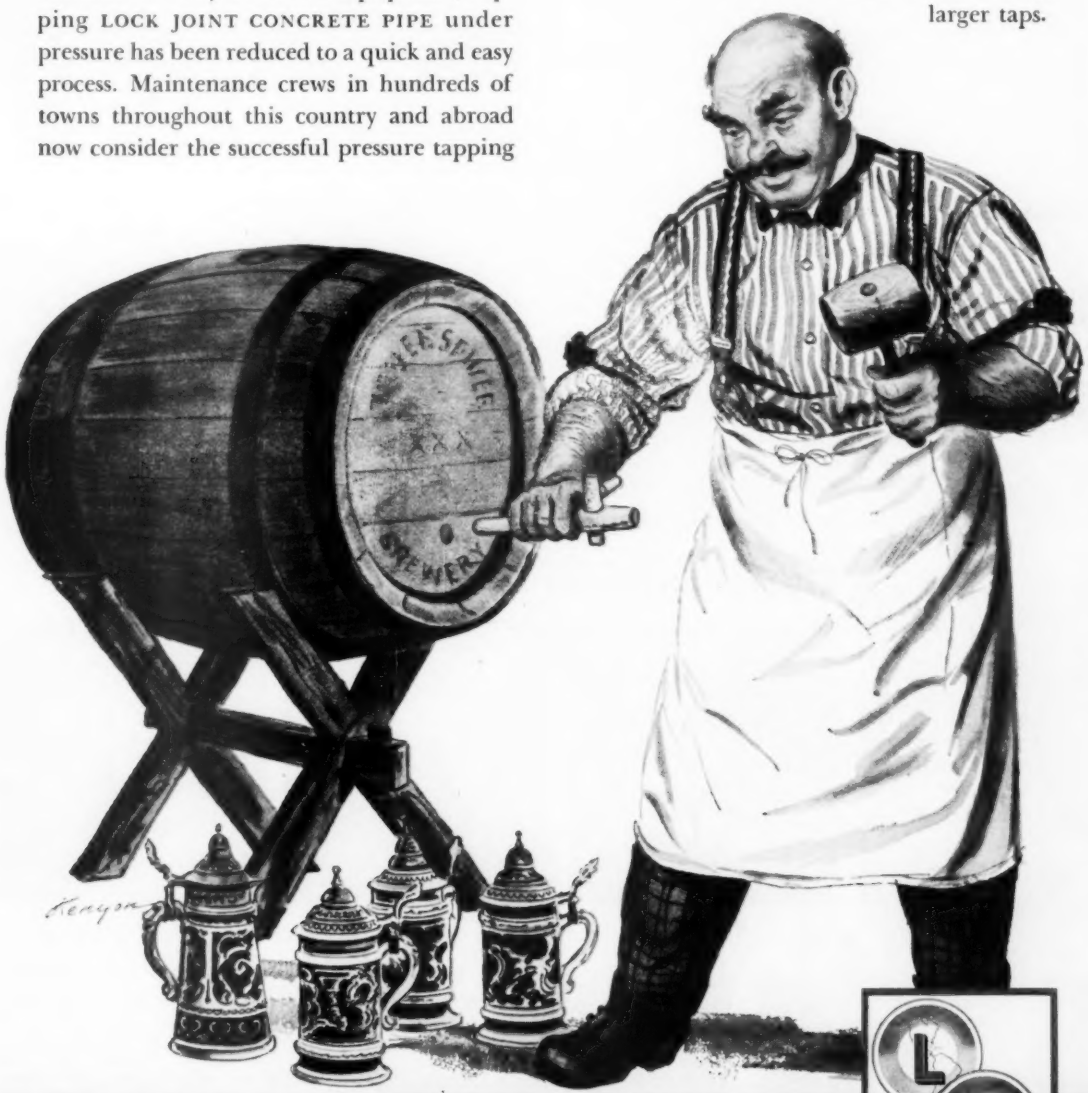
Upon request, we would be glad to send you our brochure covering the few simple steps required either for making service connections or for making larger taps.



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Street Cleaning & Refuse Disposal

Compactors Bring Better Collection To Anderson, S. C.

NEW, closed, packer-type refuse trucks have upgraded the collection service in Anderson, S. C. At present, the Sanitary Department has two Gar Wood Load Packers, one mounted on an International and one on a Ford truck chassis. City Manager C. C. Andrews reports that the city currently has bids out for a third. The city still has six scow-type trucks but will replace all but two that will be retained for hauling branches and trees.

The city uses a crew of four men and one driver to each truck. The crew uses a common washtub to bring the refuse out to the truck, thus eliminating the hauling of heavy garbage cans.

Refuse Disposal

To dispose of the refuse, the city uses the sanitary landfill method. For this work, it has an International TD 18 crawler tractor with a Drott Bullclam bucket. The fill area is in the shape of a gully and has been used for the past eight years.

The city, growing fast, currently has 20,000 in its city limits and 25,000 in the suburban area. The city offers the use of the landfill for the disposal of refuse to the out-of-city residents at a price of $1.44 per truckload. Private collectors have to serve these areas.

Trenton H. Bush (in uniform), superintendent of sanitation, is empowered to make arrests for sanitary-law violations in Anderson, S. C. (Below) The sanitary landfill is gradually reclaiming gully areas outside the city.

Operation Clean Sweep!

Problem

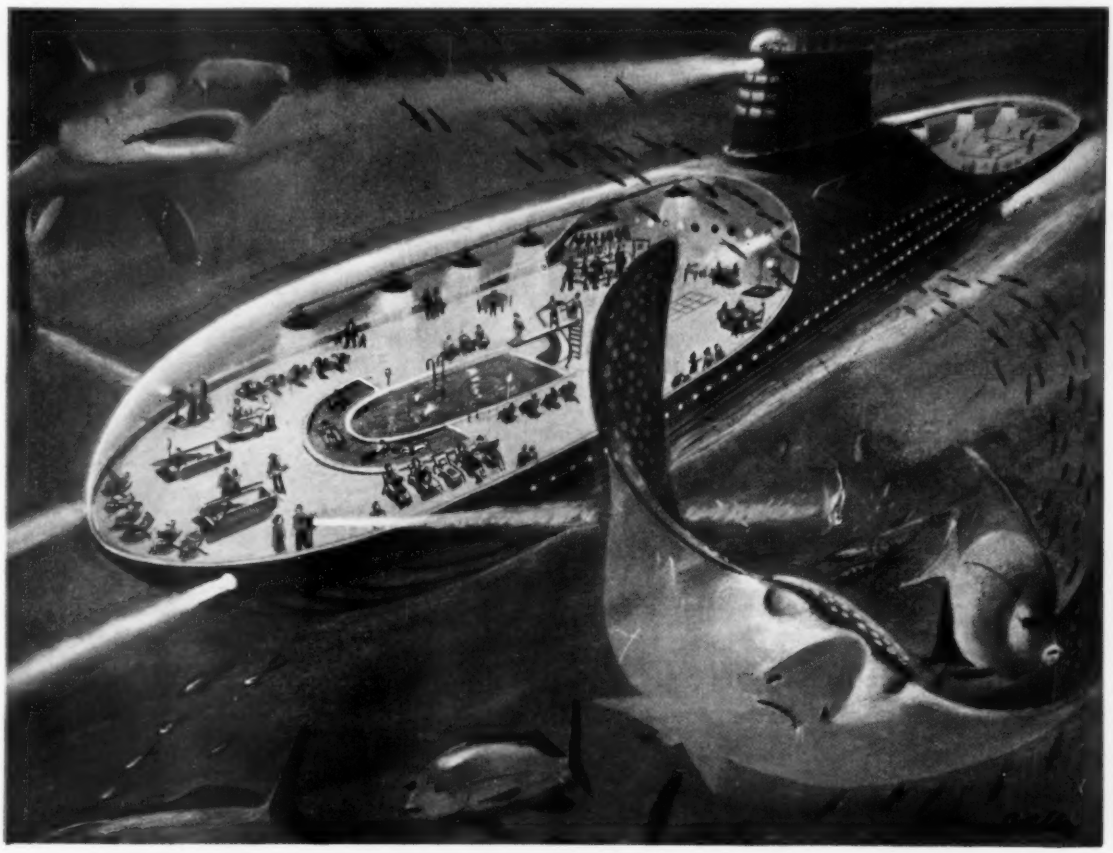
Cleared For Operation

Cooperation

Sweeping

Result . . . *clean sweep!*

Public indifference disappeared when Philadelphia's Department of Streets showed its citizens that a little help from them would bring about spick-and-span streets. Short-time parking restrictions plus street-cleaning crews that moved quickly to sweep and flush the streets are the methods used.



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Records show that over 60 American cities from coast to coast are still served by cast iron water and gas mains laid more than a century ago. And modernized U. S. Pipe... centrifugally cast, quality-controlled from mines to finished product... is extra rugged, more dependable than ever.

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PIPE
FOR WATER, GAS, SEWERAGE AND INDUSTRIAL SERVICE
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U. S. PIPE AND FOUNDRY COMPANY, General Office: Birmingham 2, Alabama

A WHOLLY INTEGRATED PRODUCER FROM MINES AND BLAST FURNACES TO FINISHED PIPE.

Connect branch mains

without interrupting flow

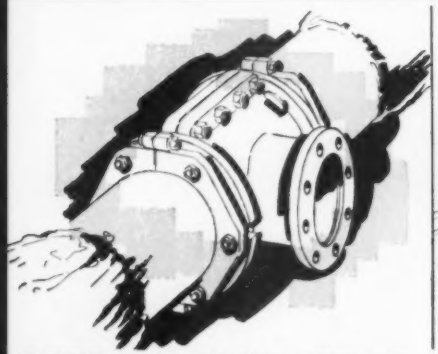
Mueller Tapping Sleeves and Valves or Mueller Tapping Crosses and Valves give you a practical and economical method of running branch mains – without loss of water or interruption of flow in the main.

■ Calked or mechanical joint type are available to suit your individual needs. Extra long length of tapping sleeve or cross plus heavy construction actually strengthens the main where connection is made. Seat opening of tapping valves is larger than nominal size to permit full diameter cuts to be made. A nominal size of mechanical joint tapping sleeve or cross will fit all classes of cast iron pipe regularly used, by using two sets of gaskets.

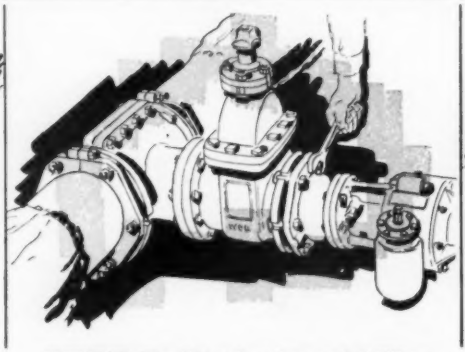
■ Mechanical joint tapping sleeves or crosses, to fit main sizes 4" through 12", offer various combinations of outlets 2" through 12".

■ Calked type tapping sleeves or crosses to fit all classes of pipe 3" through 36" with various combinations of outlets 2" through 16".

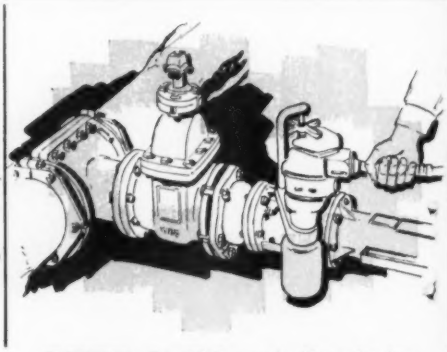
■ Mueller Tapping Valves, calked or mechanical joint type, are available with conventional packing or "O" ring stem seals. Both types have the same time-proven construction as the Mueller AWWA non-rising stem Gate Valve.



STEP 1: Attach sleeve. Clean main of rust and scale. Position and bolt tapping sleeve to main. Tighten mechanical joints or calk and lead sleeve.



STEP 2: Attach valve and drilling machine. Bolt tapping valve to tapping sleeve. Attach hand or power operated drilling machine to valve. Open valve wide.



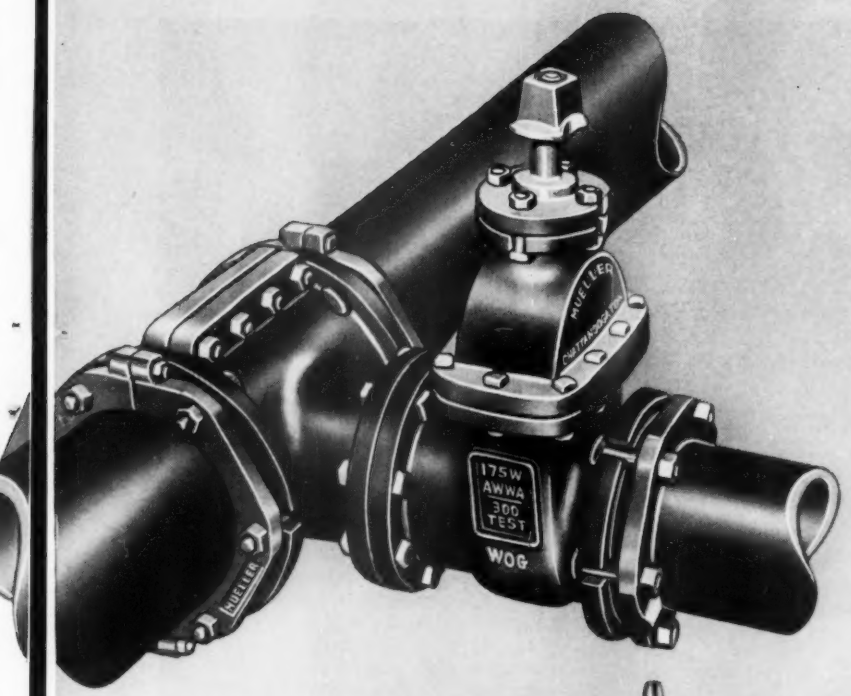
STEP 3: Make cut. Move boring bar forward until it strikes main. Retract two turns–engage automatic feed–make cut. When cut is completed, retract cutter which retains coupon. Close valve–remove drilling machine.

Contact your Mueller Representative or write direct for complete information on Mueller Tapping sleeves and crosses, tapping valves and split repair sleeves.

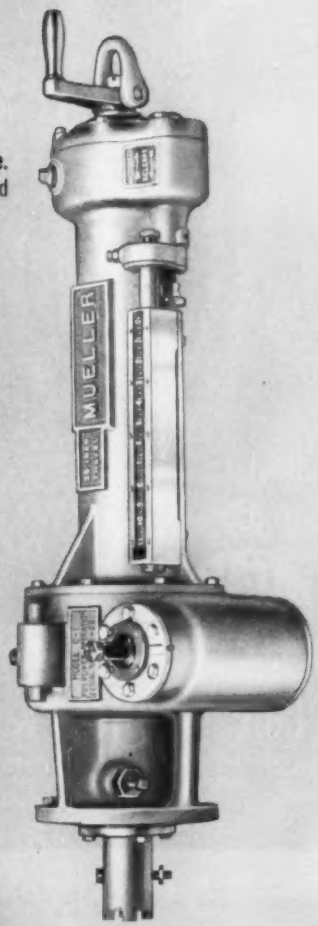
MUELLER CO.

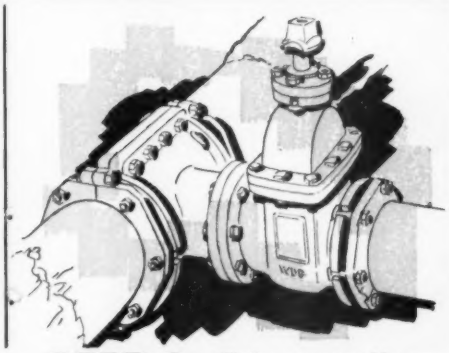
Dependable Since 1857

MAIN OFFICE & FACTORY DECATUR, ILLINOIS

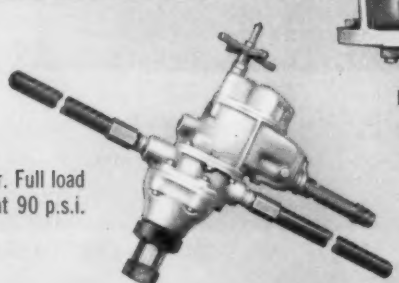


"CC" or "C-1" Drilling Machine. Hand operated or power operated for drilling through the main.

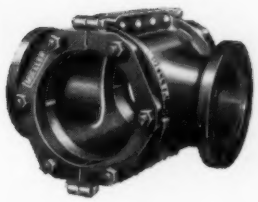




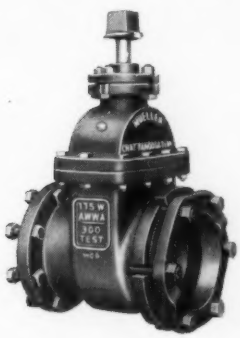
STEP 4: Make connection. Slip branch main into valve and tighten mechanical joint or calk and lead main to valve. Open valve and branch main is activated.



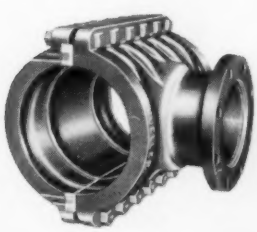
H-600 Air Motor. Full load speed 56 rpm at 90 p.s.i.



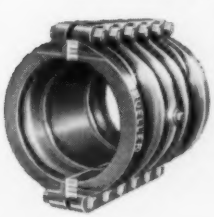
Tapping Cross. Calked or mechanical joint type. Nominal size fits all classes of cast iron pipe.



Tapping Valve. Calked or mechanical joint type. Perimeter pressure seating of discs. Conventional packing or "O" ring stem seal.



Tapping Sleeve. Calked or mechanical joint type. Nominal size fits all classes of cast iron pipe.



Split Repair Sleeve. Calked or mechanical joint type. One side of sleeve has tapped outlet with plug for escape of fluid while the sleeve is tightened around the leak.

Floating on the line . . .

Hortonsphere means new efficiency at sewage treatment plant

40-ft. diam. Hortonsphere at Benton Harbor, St. Joseph, Michigan, sewage treatment plant.

At the Benton Harbor, St. Joseph, Michigan, sewage treatment plant, as at many modern sewage treatment plants, digester gas is used as fuel for operation of the plant. To equalize the variable gas production with the demand, a 40-ft. diameter Hortonsphere® was installed. When gas is produced at a higher rate than usage, it is stored in the Hortonsphere. When the demand exceeds the supply, gas flows from the sphere to meet the demand. A system such as this permits the most efficient use of all gas produced.

Further information, estimates or quotations on a Hortonsphere, or other welded steel plate structures may be obtained by writing our nearest office.

CBI

Chicago Bridge & Iron Company

Atlanta • Birmingham • Boston • Chicago • Cleveland • Detroit • Houston
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San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

Water Supply & Treatment

Material for the new water main project arrived shortly before the construction contract was awarded and is being stored temporarily in the Street Department yard alongside the railroad siding.

Policy Change Speeds Construction

SPECIAL conditions often dictate a change in policy. This was the case in South Milwaukee, Wis., on two water main projects; one recently completed, the other now under construction.

For many years the city had found it expedient to award contracts calling for the successful bidder to furnish all material. Delivery schedules seldom interfered, for the jobs usually included sewer and water construction in several areas and there was always enough material of one kind or another to keep the work moving. Along came two rush jobs that required scheduled delivery of material. Delayed delivery in this case would have held up the entire project.

A change in policy was the answer. Material was ordered by the water department before plans and specifications for the work were completed. The street department cleared an area alongside their railroad siding and offered the use of its equipment for unloading if needed. Job specifications called for the contractor to transport the material from the storage yard to the job site. Delivery dates were specified to coincide with the construction schedule that was established.

The policy change actually resulted in a small savings. The contractor agreed to remove the material from the cars, at no cost to the city, whenever it was feasible to store the material along the job site. He also made his equipment available for unloading operations whenever needed.

The main now under construction includes approximately 5,000 feet of 20-inch pipe, 700 feet of 16-inch pipe, and 5,000 feet of 12-inch pipe, all cast iron, and is furnished by Lynchburg Foundry Company. Valves were supplied by the Mueller Company.

Tomaro Contractors of Cudahy, Wis., held both contracts. The work is under the direction of Wallace Nienow, city engineer and John Skorupski, water department superintendent. Oscar McCann is superintendent of streets.

No Water Supply Worries for New Castle County

IT'S not the supply, but the storing, treating, and distribution of the available water that should concern those responsible for supplying water within New Castle County and the City of Wilmington, Del. This was the conclusion of a report recently prepared by the firm of Whitman, Requardt and Associates, Engineers of Baltimore, Md., and handed to the Levy Court. The survey was authorized by the court last October 24 after consulting with the county's Regional Planning Commission.

The Baltimore firm considers the county fortunate in that it is located in the lower drainage area of four streams. The streams are only partially developed, making about 20% of their yearly flow available for use with present storage reservoirs. When needed, reservoir capacity could be increased to utilize as much as 50% or even 75% of the available water. This would amount to 225 mgd (million gallons daily) or 340 mgd, respectively. Present water usage, based on 1955 figures, is estimated at 37 mgd on a yearly average and 46 mgd during the peak summer period. Last year, Wilmington averaged 25 mgd with a maximum monthly pumpage of 34.5 mgd. These figures represent filtered water pumpage.

The report concludes that there is no reason for restricting the use of public water supplies in New Castle County in the future, except for temporary deficiencies in distribution, pumping, or filtration capacities. These deficiencies should and can be remedied within a period of one year.

HERE'S A LIFETIME STOP SIGN...

fade proof, rust proof, chip proof!

Day and night, this vivid new sign will remain as brilliant and readable as on the day it was made. And it will STOP more motorists with its message, year after year. A revolutionary new porcelain-on-aluminum finish that can be bent or struck and will not fracture, guarantees permanence of color. At night, it's Stimsonite—with unequalled reflectivity. Stimsonite won't wear or fade and can be seen from a greater distance than any other reflective material.

With this sign you can forget repainting, treatment with new reflective material, or other maintenance. This new porcelain finish is so tightly fused to the aluminum that it "moves with it." The sign is extremely light for easy handling and erecting.

Try this LIFETIME stop sign for outstanding legibility and for the true, long term economy it offers.

Write for bulletin with all the details.

STIMSONITE® *for* — *Seeability* / *Readability* / *Durability*

AGA DIVISION

ELASTIC STOP NUT CORPORATION OF AMERICA

1027 NEWARK AVENUE, ELIZABETH 3, NEW JERSEY

Chicago Stages Brilliant Fire Parade

Recently acquired fire-fighting and rescue equipment—seven aerial ladder trucks, ten pumping engines, and ten ambulances—and the men who man them take part in a dramatic demonstration in front of the "windy city's" Museum of Natural History.

CHICAGO, Ill., staged a mighty parade of fire department apparatus consisting of seven new Four Wheel Drive aerial ladder trucks, 10 new Mack pumpers, and 10 new Cadillac ambulances. The accompanying photo shows a sensational display of two aerial ladders pyramided together with six firemen on each. The aerial ladders were raised, the turntables rotated 180 degrees, the ladders extended 65 feet and angled against each other in 38 seconds.

Aerial Ladder Trucks

The new aerial ladder trucks, part of Chicago's 25-truck Four Wheel Drive hook and ladder fleet, are each 63 feet long, weigh 28,000 pounds, and have 387 feet of ladders, including an 85-foot aerial ladder. The aerial ladder snaps up by spring hoist when released, Commissioner Mullaney pointed out, and continued: "The laminated wood main aerial ladders in testing withstood in excess of 12,400 pounds pressure, 24% more than natural wood ladders of the same dimension."

The Four Wheel Drive aerials are truck tractor and semitrailer combinations, with power from the 240-horsepower engine distributed to all four wheels of the tractor. This four-wheel drive provides greater traction, easier handling, and virtually eliminates skidding and jackknifing dangers under any driving conditions. Their speed is 50 miles an hour.

The pumping engines are equipped with 200-gallon water tanks and two-way radio and will be used on expressways where water for fire-fighting purposes is not available. The ambulances are designed for mass emergency transportation and carry two firemen who have qualified for a Red Cross Fire Aid certificate. After the demonstration in front of the Museum of Natural History the equipment was paraded through the Loop for noonday crowds.

Recreation for Firemen

A STANDING joke of the layman is that firemen spend much of their time playing checkers, dominoes, and cards. Because such games encourage gambling and profanity they are not played in the Austin, Texas, Fire Department.

Games that are encouraged are those involving muscular movement tending to promote physical fitness. Almost every fire station has facilities for table tennis, volley ball, badminton, croquet, pitching washers, horseshoes, softball, handball, and paddle ball. Firemen avoiding these physical activities have available radio, television, literature, and crossword puzzles. The department maintains a fire service library in an effort to help the men acquire more knowledge of their occupation.

We want to prevent an impression developing that the fire-fighter's job consists only of two extremes, fire-fighting and recreation. As he must attain a passing grade on semiannual efficiency tests covering all phases of his work, a fire-fighter must study two hours per shift. He combines study and recreation so as to perform his duties well as protector of community life and property.

VERNON KUNSHICK
Administrative Assistant
Fire Department
Austin, Texas

Informative Catalogs - Yours For The Asking!

To obtain any of the following catalogs, write directly to the manufacturers or use the Post Card on the insert following Page 52

An Easy-to-Erect Municipal Warehouse

1 Now you can get a sturdy, attractive municipal warehouse quickly and economically with a Stran-Steel Rigid Frame building. These buildings feature special Stran-Satin walls, of new satin-finish steel. Five clear-span widths are available—40, 50, 60, 70 and 80 feet—providing unlimited flexibility for the size and shape building best suited to your needs. Write STRAN-STEEL CORP., DEPT. L, ECORSE, DETROIT 29, MICH.

Clarification, Filtration and Water Softening Equipment

2 Cities choosing Permutit water conditioning equipment get a complete, integrated service including water-analysis labs, engineering, equipment, controls, and ion exchange resins—all from one source. Technical bulletins on softeners, zeolites and resins, automatic controls, gravity filters and other equipment are available on request. Write THE PERMUTIT CO., DEPT. AC-6, 330 W. 42nd ST., NEW YORK 36, N. Y.

Standby Electric Plants

3 When power fails in schools, hospitals, municipal plants and other important installations, you can depend on a Ready-Power standby electric plant. These dependable units are available in a wide range of models to meet any municipal requirement. They are fully discussed in literature from THE READY-POWER CO., 11231 FREUD AVE., DETROIT 14, MICH.

Chip That Bulky Brush

4 Put those big, bulky branches and brush trimmings through an Asplundh chipper and watch the efficiency curve of your crews zoom upward. With the help of the chipper, you can haul more brush with one truck than you did with four trucks in the past. Moreover, you don't have to aggravate smoke nuisances by burning the brush, and you can use the chips for a mulch, for walks, and for cushion material in playgrounds. For a new booklet, *The Modern Approach to the Brush Problem*, write ASPLUNDH CHIPPER CO., DEPT. C-2, 505 YORK RD., JENKINTOWN, PA.

New, Front-End Refuse Collection

5 With the new Dempster-Dumpmaster for handling refuse in 1¼-, 2- and 3-cubic-yard containers and the Dempster-Dumpster for handling bulk refuse in 6- to 15-cubic-yard containers, municipal refuse collection is turned into a fast, easy operation. One truck serves scores of containers. Each container is picked up hydraulically, and emptied into the front-end compaction type body. For further details, write DEMPSTER BROS., 876 DEMPSTER BLDG., KNOXVILLE 17, TENN.

Cleaning Sewers and Drains

6 An entirely new principle is involved in Ohio Tool & Engineering Company's sewer and drain cleaning machine. It utilizes an "Electric Eel" with a dual cable that self-feeds both in and out quickly and efficiently. The lightweight power unit is easy to operate, and eliminates all manual handling. A complete set of cleaning tools are available for lines ranging from 3 to 16 inches. Write THE OHIO TOOL AND ENGINEERING CO., 128 N. SPRING ST., SPRINGFIELD, OHIO.

Kills Mosquitoes

7 You don't need expensive equipment to kill mosquitoes when you use efficient Tossits. All you do is toss these capsules into infested water. Each Tossit dissolves quickly and the solution spreads in all directions forming a film of larvae-killing insecticides over the surface of the water. One Tossit will larvacide 1,000 square feet of water surface. Write WYCO, INC., 5200 S. DIXIE HIGHWAY, W. PALM BEACH, FLA.

Park Mowers

8 Cities with park and right-of-way maintenance problems can get fast, efficient, low-cost help from Sunflower reel-type gang mowers and rotary cutters. The Kub-Klipper cuts grass, weeds, stubble and brush quickly. Drag-type and tractor-mounted mowers are available for all tractors. For facts and prices, write SUNFLOWER INDUSTRIES, INC., 103 SOUTH KANSAS AVE., OLATHE, KANS.

Street Paving Forms

9 Use Blaw-Knox steel forms on work such as concrete curb, curb and gutter, integral curb, sidewalks and gutters. These forms are standardized for interchangeability. They are easy to set, strip and handle. For complete specifications and other data, get *Bulletin No. 2259-R* from BLAW-KNOX EQUIPMENT DIV., BLAW-KNOX CO., 30 CHARLESTON AVE., PITTSBURGH, PA.

Traffic Control by Cones

10 Three sturdy Interstate Trafficones—Barricade, Channel, and Line-Gard—plus special adapters, will provide your community with a sound system of traffic control. The rubber Trafficones are highly flexible and resilient, and will absorb shock when struck by a vehicle. They are available plain or reflectorized in standard colors. Write INTERSTATE RUBBER PRODUCTS CORP., DEPT. 100A, 908 AVILA ST., LOS ANGELES 12, CALIF.

Measures Traffic Accidents

11 Every traffic investigation kit should include one of these Rolatape measuring wheels. The efficient Model 200 is easily operated by one man and gives an accurate total at all times. It measures the position of vehicles, skid marks, braking distance, and the general dimensions of streets and intersections. Get full details on the Traffic Model No. 200 from ROLATAPE INC., 1741 14th ST., SANTA MONICA, CALIF.

Concrete Tanks for Water, Sewage

12 Current trends in the design and construction of prestressed concrete tanks for municipal water and sewage works are discussed in *Bulletin T-12*. Also included are illustrations of typical tanks and standpipes. Get your copy, without cost, from THE PRELOAD CO., 211 E. 37th ST., NEW YORK 16, N. Y.

Street-Lighting Standards

13 Concrete street lighting standards, prestressed for long life and low maintenance, are described and illustrated in *Catalog No. 300*. For your copy, write AMERICAN CONCRETE CORP., 5092 N. KIMBERLY AVE., CHICAGO 30, ILL.

Highway & Railroad Signs

14 Highway signs and railroad crossbucks of extruded aluminum are available in a variety of sizes in octagon, round, rectangular, square and diamond shapes. Write for booklet to KAISER ALUMINUM & CHEMICAL CORP., CONSUMER SERVICE DIV., PR-856, 1924 BROADWAY, OAKLAND 12, CALIF. Also discussed are methods of finishing aluminum sign panels by applying reflective sheeting, paint, baked enamel and porcelain enamel.

Light-Weight Tapping Machine

15 Water-works men are offered the Hays Model B, a light-weight aluminum alloy tapping machine especially designed for the man in the ditch. This efficient machine is fast and easy to operate, and requires less working room. Write the HAYS MANUFACTURING CO., ERIE, PA.

Butterfly Valves

16 Easy and economical to install, these rubber-seated butterfly valves are designed for positive drop-tight shut-off, long life, and minimum maintenance. They are furnished with manual or automatic operators in 6- to 72-inch sizes. All are constructed to meet AWWA specifications. For a new bulletin, write F. B. LEOPOLD CO., INC., 2413 W. CARSON ST., PITTSBURGH 4, PA.

Equipment for Water, Sewage Plants

17 A full line of chemicals, solutions, apparatus and instruments for municipal water and sewage treatment plants is described and illustrated in this informative new catalog. For your copy, write GENERAL LABORATORY SUPPLY CO., P. O. BOX 2607, PATERSON, N. J.

New Pump for Small Water Wells

18 Layne & Bowler Pump Co. introduces the Verti-Line package-pump, a new pumping unit for wells as small as four inches in diameter. The Verti-Line comes in 4- and 6-inch sizes, and is powered by a General Electric VHS 60-cycle motor with 3,600 rpm. Sizes range from two through 7½ hp, for heads to 340 feet, and in capacities from 200 to 7,500 gph. Write LAYNE and BOWLER PUMP CO., 2943 VAIL AVE., LOS ANGELES 22, CALIF.

Traffic Line Marking

19 Now you can make straight, curved, continuous or skip lines at walking speed with the new Upright Florline marking machine. This light-weight, low cost machine is easy to handle and economical to operate. Its 18-inch line-guide folds back at curbs, walls, and other obstructions. For all the facts, write H. C. SWEET CO., 12345-A TELEGRAPH RD., DETROIT 39, MICH.

Road Laws of All States

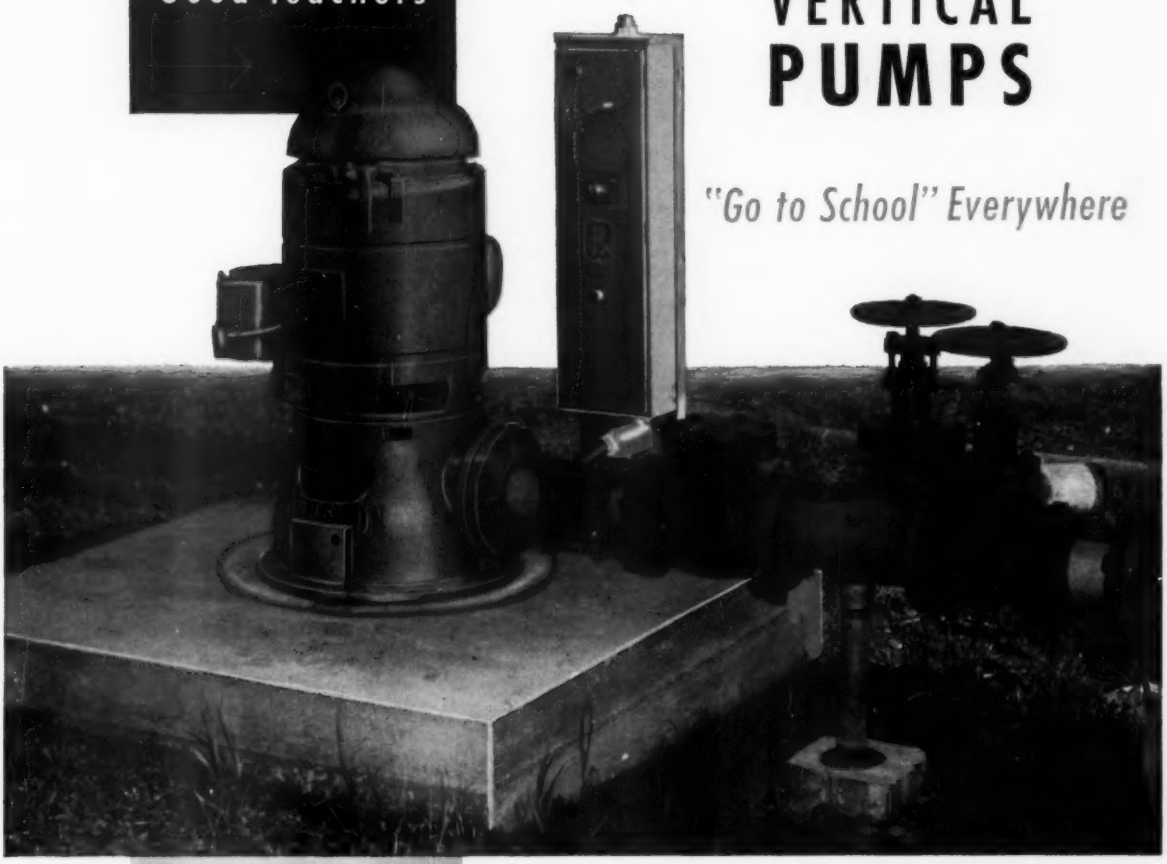
20 A new 1956-57 Truck and Trailer Size and Weight Restrictions booklet giving the road laws of all 48 states and the District of Columbia, is available free from the Public Relations Department, FOUR WHEEL DRIVE AUTO CO., CLINTONVILLE, WIS.

(Please turn to page 32 for more Bulletins)

As Necessary as Good Teachers

JOHNSTON VERTICAL PUMPS

"Go to School" Everywhere



Johnston Pump installed at a new school in California

JOHNSTON VERTICAL PUMPS

You'll find "well-educated" Johnston Pumps giving education, as well as water, a lift at grammar schools, high schools, colleges and other educational institutions everywhere. A dependable and plentiful supply of water is absolutely essential to the flow of learning, and a good Johnston Pump often precedes the hiring of the teachers. Low first cost, low operating cost, scientific design and interchangeable parts are some of the reasons why Johnston Pumps have been so popular for nearly half a century.

Get the complete story. Write or call today for colorful descriptive bulletin.

JOHNSTON PUMP COMPANY

Founded in 1909

BIN "K", PASADENA 15, CALIFORNIA

AC-76

Which Catalogs Interest You?

Write directly to the manufacturers, or use the Post Card on the insert following page 52

Filters for Small Water Systems

21 Installed in a small water treatment plant, the Multicell filter takes up less floor space than a series of vertical filters, and requires less pipe, valves and fittings. The non-clogging, stainless-steel baffles permit filtering and backwash operations with a minimum of head loss. For further details, write GENERAL FILTER CO., AMES, IA.

No Pump Houses Needed

22 You're through worrying about costly, unattractive pump houses when you install a Reda Submergible Electric Pump. Economical to operate, these automatic pumps assure a large water volume. They are available in capacities ranging from 5 to over 3,000 gpm, in sizes from 1/3 to 500 hp. For complete information, write the REDA PUMP CO., BARTLESVILLE, OKLA.

The Key to Good Rapid Sand Filters

23 The right sand and gravel, properly graded, free of soluble particles, hard, yet not smooth, spells out the difference between a good rapid sand filter and a poor one—hard to wash, unable to let the water through it at proper rates of flow. Designers of filter plants who know, use this sand and gravel. Write NORTHERN GRAVEL CO., BOX 307, MUSCATINE, IA., and get full details including a list of major plants now using its product.

Brass Goods for Water Service Connections

24 The Haydenville Co. has been making high grade brass goods for municipal water-works for 110 years. The company's line includes corporation stops, an inverted key curb stop and waste, and the water-works Y valve. For a complete catalog, write THE HAYDENVILLE CO., HAYDENVILLE, MASS.

Aerial Maps

25 Speed city planning operations with accurate topographic maps made from aerial photographs. For aerial photography best suited to your requirements, contact the ABRAMS AERIAL SURVEY CORP., LANSING, MICH. A new booklet, *Serving the Engineering Profession*, presents you with a view of the firm's aerial survey and photogrammetric facilities.

New Tractor-Shovel

26 The new 2¼-yard Payloader, Model HO, is fast and easy to operate and rides smoothly, with or without a load. The machine is designed with power-steering, and power-brakes on all four wheels. It has more traction and digging power for a wider range of ground conditions. For full information, write THE FRANK G. HOUGH CO., 710 SUNNYSIDE AVE., LIBERTYVILLE, ILL.

Masks Odors

27 Malodors from municipal garbage dumps can be effectively masked with Alamask industrial reodorants. Too, the efficient chemical is helpful in abating the malodors of garbage trucks and ash discharge from municipal incinerators. Get full details from RHODIA, INC., 60 E. 56th ST., NEW YORK 22, N. Y.

Rate Controller for Water Filter Plants

28 Easily installed in your water filter plant, the new Modulair pneumatic rate controller is only two to three pipe diameters long, and fits wherever a piece of pipe can fit—in any position, horizontal or vertical. It offers a high degree of control that extends for wide ranges of head loss and flow rates, including complete, tight shutoff. Filter runs are extended and maintenance is cut to a minimum. For *Bulletin* 950, write SIMPLEX VALVE & METER CO., DEPT. AC-5, 7 E. ORANGE ST., LANCASTER, PA.

Stop Rust—Painlessly

29 Put the scraper, the wire brush, the sand blaster away, and protect your metal structures with a paint that penetrates the rust and bonds itself to the bare metal. Rust-Oleum dries to a firm, decorative coating that resists sun, fumes, salt water, heat, humidity, weathering. You can get it in most colors. Get full information from RUST-OLEUM CORP., 2514 OAKTON ST., EVANSTON, ILL.

Water Hammer—Its Cause and Cure

30 How water hammer starts in municipal pipelines, and ways of solving this annoying problem, are discussed in a new booklet from JOSAM MFG. CO., MICHIGAN CITY, IND. A sure method of eliminating water hammer is to install a Josam shock absorber on any new or existing pipeline. The absorber is leak-proof and cannot wear out. It enables you to avoid expensive shut-downs and repairs. Write for *Manual S.*

"Iron Cop"

31 Protect school zones, playgrounds and dangerous crosswalks and, at the same time, release your police force for other duties, with this sturdy "Iron Cop." The special traffic sign has a policeman's figure and an official blue uniform in baked-enamel finish. It stands 6 feet-4 inches high, and is easily rolled into position on a stable iron base. Write EASTERN METAL OF ELMIRA, INC., ELMIRA HGTS., N. Y.

Pouring Pots and Pavers Tools

32 Use these pouring pots and pavers for fixing cracks in pavement, expansion joints and other city repairs. The wide assortment of round and oblong pots feature specially-designed spouts for general purpose and specific pouring. A full line of pavers tools includes tampers, smoothers, rakes and sandals. Write AEROIL PRODUCTS CO., INC., 69 WESLEY ST., DEPT. M6, SOUTH HACKENSACK, N. J.

Labor-Saving Incinerators

33 Today's incinerators have to operate in trouble-free style from the time the refuse drops into the receiving pit or onto the charging floor until the fly-ash-free gases leave the stack. Further, they have to operate that way with a minimum of labor. You get that kind of performance when incinerators are equipped with Morse Boulger cylindrical mechanically stoked furnaces. For *Bulletin No. 111C*, write MORSE BOULGER DESTRUCTOR CO., 80-A FIFTH AVE., NEW YORK 11, N. Y.

Repairs Pipe Leaks Quickly and Economically

34 The Atlas pipe tool and pipe patches are available for all pipe sizes—½-inch and up—and will repair any leak quickly, permanently and at low-cost. The tool is made in two styles, saddle type and chain type. Patches are made of steel with either neoprene or asbestos gaskets. For additional data, write ATLAS INDUSTRIES, INC., P. O. BOX 8152, HOUSTON, TEX.

Easy Way to File City Maps

35 A simple, and inexpensive way to file large maps and drawings of city plants and sewage and water systems, is with the Roll-A-Way filing system. The system consists of a rack with parallel tracks from which the maps are suspended by means of roll hangers. Any map can be quickly rolled from its filing place into full view. Write ROLL-A-WAY FILING SYSTEMS CO., 4845 BELLEVUE, DETROIT 7, MICH.

Fiberglas Diving Boards

36 Equip the swimming pools in your city with American's fiberglas coated and impregnated diving boards. These boards are virtually breakproof, and are guaranteed for three years against breakage, splitting and other defects. They are reported to have greater resiliency than wood boards, and do not have to be rotated year by year. Get full details from AMERICAN POOL CO., FOX ISLAND RD., PORT CHESTER, N. Y.

Positive Protection for Electric Motors

37 Overloads do occasionally hit all electric motors, and when they do, they can make the motors melt like butter in the summer sun. With an Adlake mercury relay on the job, your worries about this expensive threat to your motors are over. The relays require no maintenance, and serve as a positive barricade to the overloads. Dirt, moisture or temperature changes cannot affect their operation. Get full story from ADAMS and WESTLAKE CO., 1176 N. MICHIGAN, ELKHART, IND.

Dependable Chlorination

38 Dependable chlorination at a moderate price is your with a W & T V-notch chlorinator. The heart of this new chlorinator control system is a V-notch variable-orifice. With it, the flow of chlorine gas is adjusted by varying the area of the orifice. Get full information by writing WALLACE & TIERNAN INC., 25 MAIN ST., BELLEVILLE 9, N. J.

Sample Defoamers Free for Activated Sludge

39 This new line of defoamers for use in sewage treatment plants is available in four grades for a variety of uses. The defoamers are effective in concentrations as low as one part per million. Free trial quantities may be obtained from SWIFT & CO., INDUSTRIAL OIL DEPT., 1800 165th ST., HAMMOND, IND. They are particularly useful in plants using activated sludge or other types of aeration for treatment.

(Please turn to page 34 for more Bulletins)

Parlon® Stays On

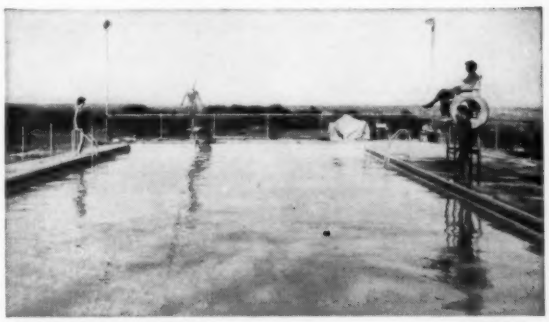
Protects Municipal Swimming Pools

PARLON ON CONCRETE—Since the City of Omaha opened this municipal pool in 1950 it has been kept looking its Sunday Best all season long by RAMUC, a Parlon-based protective coating manufactured by Inertol Co., Inc., Newark, N. J. Omaha's general foreman of maintenance credits this finish with keeping this concrete pool attractive while holding down maintenance and operating costs.

Whether the pool is steel or concrete, municipal maintenance departments heads throughout the nation have found that they can depend on a Parlon-based finish for longer-lasting beauty at lower long-term cost.

Already familiar with the unique chemical and corrosive resistance qualities of Parlon-based coatings for many other municipal uses, these men have found that special Parlon formulations provide the colorful finish they want for pools combined with under-water wearing properties that mean less maintenance cost.

Wherever protective coatings must meet a challenge, whether it be interior or exterior, masonry, wood or metal, look to Parlon for the ideal all-purpose maintenance paint. Your local paint supplier can provide additional information, or write direct to Hercules.



PARLON ON STEEL—This steel pool, too, is painted with RAMUC. Its tile-like finish has withstood the attack of water and water-treatment chemicals without peeling or powdering.

HERCULES POWDER COMPANY
997 Market Street, Wilmington 99, Del.

CR56-5

PARLON CHLORINATED RUBBER PAINTS ARE AVAILABLE FROM 400 MANUFACTURERS UNDER THEIR OWN BRAND NAMES

Which Catalogs Interest You?

Write directly to the manufacturers, or use the Post Card on the insert following page 52

Fast Way to Unload Hopper Bottom Cars

40 Using a National car shaker, one man can unload coal, coke, cinders, sand, stone, aggregates or other bulk materials in minutes. All he does is attach the shaker to the hopper-bottom car and operate the motor control button. Descriptive literature and prices may be obtained from NATIONAL CONVEYOR & SUPPLY CO., 363 N. HARDING AVE., CHICAGO 24, ILL.

Municipal Savings from Diesels

41 A safe power bet for any municipal plant is a Cooper-Bessemer diesel engine, designed to run smoothly and economically on either heavy fuel, light crude, or a combination of both. This company also offers gas and gas-diesel engines, and engine and motor-driven compressors. For catalog, write COOPER-BESSEMER CORP., MOUNT VERNON, OHIO.

Dispenses Glass Beads Automatically

42 Easily attached to any striping machine, the Bavin automatic glass-bead dispenser is ideal for marking traffic lines on streets, highways and airports. The unit will dispense glass beads on any solid or skip line—from three to six inches wide. Starting or stopping the flow of beads is controlled by air from the paint gun air line. Get full details from G. D. BAVIN CO., 2500 W. SIXTH ST. BLDG., LOS ANGELES 57, CALIF.

Microfilming City Records

43 It costs but a fraction of a cent to put an important city record on Recordak microfilm. Moreover, the microfilmed record can be stored in as little as 1% of the space required for originals. In addition to these advantages, microfilmed records are easily placed for safekeeping. For the full story on uses of Recordak microfilming, write RECORDAK CORP., DEPT. BB-6, 415 MADISON AVE., NEW YORK 17, N. Y.

Costly Water Leaks

44 A sure way to detect those costly leaks in water lines and rapidly determine their exact position is with the Model L-46 Senior Leak Detector. It is fully described in literature from THE GOLDAK CO., 1544 W. GLENOAKS BLVD., GLENDALE 1, CALIF.

Municipal Castings

45 Meter boxes and covers, street and sewer castings, and other municipal castings are designed for long, dependable service by CLARKSVILLE FOUNDRY & MACHINE WORKS, CLARKSVILLE, TENN. Other products include asphalt smoothers, earth and concrete tampers, valve boxes and curb boxes. Write for literature.

Corrosion Losses

46 Does your city have a corrosion problem? The job of preventing costly corrosion in water supply systems and sewage treatment plants is made easy with Bitumastic coatings and enamels. For an inexpensive solution to your particular corrosion problem, write KOPPERS CO., INC., 1301 KOPPERS BLDG., DEPT. 103G, PITTSBURGH, PA.

Gives Emergency Vehicles Control of Traffic Lights

47 Install El-Tec radio traffic controllers in police cars, fire trucks and other emergency vehicles. The new electronic traffic control device allows emergency vehicles to automatically turn all traffic signals red (STOP) along its route. It is available from ELECTRONIC PROTECTION, INC., 2085 N. HAWTHORNE AVE., MELROSE PARK, ILL.

Tractor Shovels

48 Mounted on four big tires, all Michigan tractor shovels are designed with torque converter, power-shift transmission and planetary wheel drive axles. Three models are available, including 1-, 1⅝- and 2¼-yard capacity machines. All are designed for greater digging power and traction, faster production, and lower cost per yard. Write CLARK EQUIPMENT CO., CONSTRUCTION MACHINERY DIV., 2495 PIPESTONE RD., BENTON HARBOR 14, MICH.

Make Your Own Traffic Markers

49 A few handfuls of sealed Stimsonite reflectors in metal holders, plus a small stock of reflectorized arrows and cutout letters, and its simple to make almost any traffic marker on the spot. These markers are easily attached to the housing with wood screws, and may be removed and reused time and again. For further details, write A'G'A DIV., ELASTIC STOP NUT CORP. OF AMERICA, 1027 NEWARK AVE., ELIZABETH 3, N. J.

Protects Joints & Fittings on Steel Water Pipe

50 An economical way to protect joints and fittings on steel water pipelines is with L-O-F Glass Fibers' Duratape. The Duratape is simply spiral-wrapped around the pipe joint and lightly flash-sealed during and after the wrapping operation. For additional data, write L-O.F GLASS FIBERS CO., DEPT. 85-66, 1810 MADISON AVE., TOLEDO 1, OHIO.

Swimming Pool Sanitation

51 Municipal swimming pool sanitation is simplified with Pittabs, a new slow-dissolving tablet form of calcium hypochlorite. Pittabs contain 70% available chlorine, and are said to provide a continuous and uniform supply of chlorine in the pool for 18 hours. How to use Pittabs, is discussed in a new brochure from COLUMBIA-SOUTHERN CHEMICAL CORP., ONE GATEWAY CENTER, PITTSBURGH 22, PA.

Outdoor Lighting

52 In suplying a whole new catalog section on outdoor area lighting, the PHILADELPHIA ELECTRICAL AND MFG. CO., 1200 N. 31st ST., PHILADELPHIA 24, PA., points out that light has changed many customs. After dark activities, with modern illumination, are carried on with as little eye strain as in daylight. Outdoor theatres, parking lots and swimming pools owe their greater success to light. The products illustrated include island luminaires and floodlamps, including fluorescent fixtures and standards.

Long Pitch Pintle Chain for Sewage Treatment

53 The advantages of maximum strength and minimum weight have been combined in the Moline long pitch pintle chain. Used in municipal sewage treatment plants, the chain is effective in grit washers, sludge collectors, scum removers and settling tanks. It is assembled with forged "T" head pins and cotters. Get full information from MOLINE MALLEABLE IRON CO., ST. CHARLES, ILL.

Concrete Sewer Pipe

54 If your city is planning the installation of sewer force mains, sewer lines free from infiltration, or subaqueous sewer lines, look into the advantages, offered by Price pressure sewer pipe. This heavy-duty, reinforced concrete pipe is easy to install, and economical to maintain. It won't crack or corrode, eliminates leakage, and prevents infiltration. For a new bulletin, write PRICE BROTHERS CO., DAYTON 1, OHIO.

New, Cold-Applied Paving Joint Sealer

55 Now you can get a tight, waterproof joint in street and airport paving quickly and easily with Presstite No. 77. This new paving joint sealer never requires heating or proportioning, and is quickly applied—even at low temperatures. It will withstand heavy impact and high-speed traffic, and provides a tight seal against water and weather. Write PRESSTITE-KEYSTONE ENGINEERING PRODUCTS CO., 39th & CHOUTEAU AVE., ST. LOUIS 10, MO.

Low-Cost Gate Valves

56 A low-cost No. 125 IBBM type gate valve is offered for use at municipal waterworks. The valve has a cast-iron body and bronze-mounted gate with a non-rising stem. Screw-type valves with standard 8-V thread are available for pipe 2½ to 8 inches in diameter. Flange-type valves with standard face and drilling are available for pipe 2½ to 12 inches in diameter. Write SMITH-SCOTT CO., INC., 6565 MISSION BLVD., RIVERSIDE, CALIF.

Kills Insect Pests

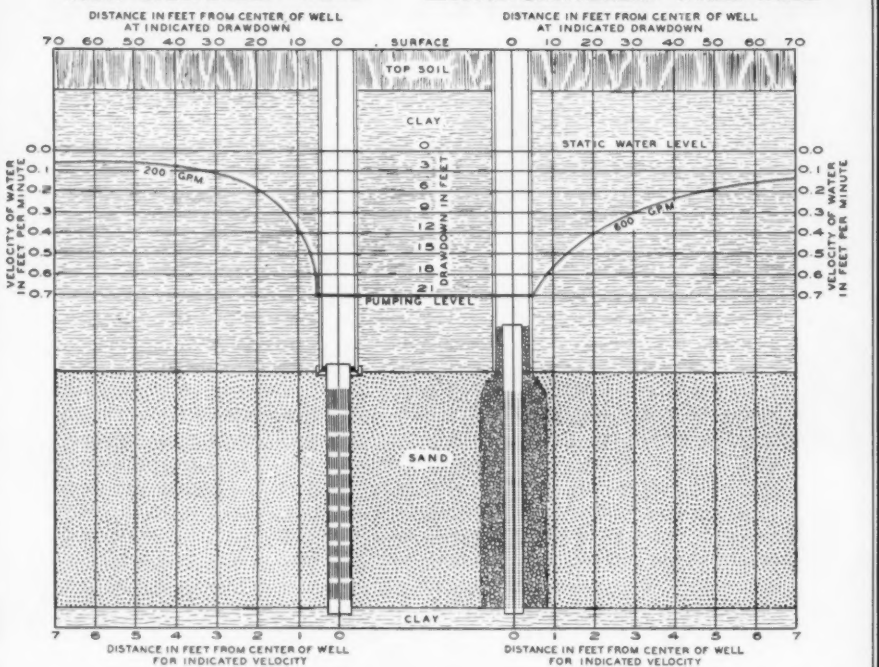
57 Mist Blow 26C, a one-shot spray concentrate, contains four principal ingredients: DDT, to control scolytus beetles and chewing insects; White Oil to control aphids, mites and scale insects; Rotenone to control chewing and sucking pests; and Chemite, a miticide that kills off all stages of mites. Get further data from CHEMICAL INSECTICIDE CORP., 129 MONTAGUE ST., BROOKLYN 1, N. Y.

Easy, Economical Way to Test Concrete

58 One of the simplest ways to test concrete pipe, tile products and soils is with the Compression Test Loadometer. All that is needed for testing is the Loadometer and a simple framework or arbor. A blue print, furnished with each Loadometer, shows the recommended structural steel arbor. Write for catalogs, prices and blue print to LOADOMETER CORP., P. O. BOX 81, BALTIMORE, 11, MD.

(Please turn to page 38 for more Bulletins)

GRAPHIC COMPARISON OF RESULTS


NON GRAVELLED WELL
LAYNE GRAVELLED WALL WELL
DISTANCE IN FEET FROM CENTER OF WELL AT INDICATED DRAWDOWN
70 60 50 40 30 20 10 0
SURFACE
TOP SOIL
CLAY
STATIC WATER LEVEL
200 G.P.M.
600 G.P.M.
PUMPING LEVEL
SAND
CLAY
VELOCITY OF WATER IN FEET PER MINUTE
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7
DRAWDOWN IN FEET
0 3 6 9 12 15 18 21
DISTANCE IN FEET FROM CENTER OF WELL FOR INDICATED VELOCITY
7 6 5 4 3 2 1 0
0 1 2 3 4 5 6 7

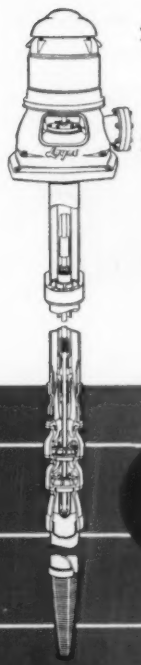
PRODUCTION AND OPERATING CHARACTERISTICS OF TWO TYPES OF WELLS

Above at right is a Layne Underreamed Gravel Wall Well equipped with Layne Shutter Screen. At left is a standard tubular, non-gravelled well with usual metal water well strainer installed in direct contact with the waterbearing sands. Both wells are twelve inches in diameter, finished in the same waterbearing aquifer and equipped with the same diameter and length of screen.

Layne Gravel Wall Wells Designed for Better Service

1. Layne shutter screen is designed specifically for use in gravel wall wells.
2. Selection of gravel and thickness of pack surrounding the screen is determined for the individual well unit after careful study of underground formations.
3. Engineering "know how" plus expert supervision eliminates guess work.

The net result is a ground water supply unit which yields more water with less draw down, consequently, low pumping cost and longer producing life—a unit which pays dividends on original cost.



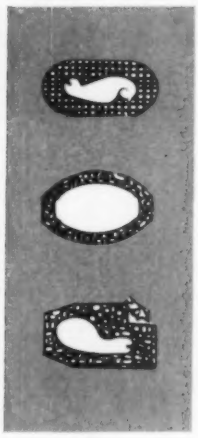
LAYNE & BOWLER, INC.
MEMPHIS
General Offices and Factory

LAYNE ASSOCIATE COMPANIES THROUGHOUT THE WORLD

Water Wells • Vertical Turbine Pumps • Water Treatment

Koven ALL STEEL SWIMMING POOLS

make an OUTSTANDING contribution to higher community morale



Today more and more civic leaders throughout the country are discovering that the old saying about *all work and no play making Jack a dull boy* refers to nearly every different age group . . . that people of almost ALL age levels (from 3 year olds to octogenarians) are turning more and more to that wonderful recreational art — swimming . . . and enjoying the tested recreational service of the All Steel Swimming Pool by KOVEN.

And for some very practical reasons: Lowest in maintenance—finest in performance—the All Steel Swimming Pool by KOVEN, leak-proof and constructed of heavy welded steel, *resists* weaknesses common to other types of pools, operates dependably even in severe climates, requires *as little upkeep* as an occasional coat of paint. In all—maintains the highest standards of service and economy.

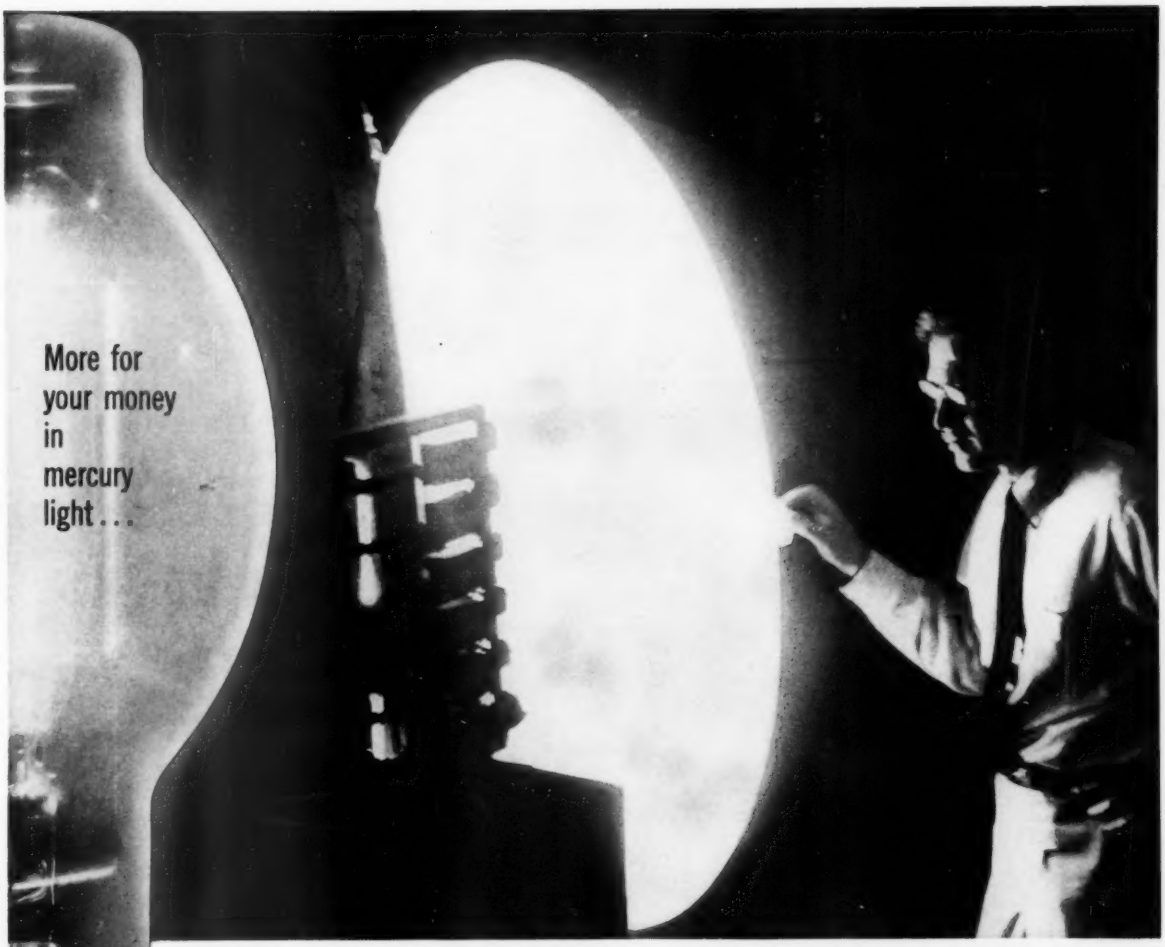
THE POOL WITH THE LOWEST MAINTENANCE

If you are interested in a pool of this quality, KOVEN, experienced in steel fabrication for 75 years, will gladly handle all details of design, construction, and installation. Call or write for a FREE colorfully illustrated booklet or a consultation with a trained representative. There's no obligation.

Any Size or Design Pool Can Be Ordered

- THE ONLY LEAK-PROOF TYPE BUILT
- INDOOR AND OUTDOOR MODELS
- 10-YEAR GUARANTEE ON ALL POOLS

Koven STEEL SWIMMING POOLS, INC.
a division of L. O. Koven & Bro., Inc.
154-A Ogden Ave., Jersey City 7, N. J.
Plants: Jersey City, N. J. • Dover, N. J. • Trenton, N. J.



NEW, INCREASED LIGHT OUTPUT FOR 13 WESTINGHOUSE MERCURY LAMPS

Now—through advanced design and manufacturing techniques—the most widely used Westinghouse Mercury Lamps give you more light when *new*, more light *for life*.

Look at the following chart. It shows the new boost in initial light output for just two of the most widely used Westinghouse Mercury lamps . . .

Lamp	Initial Lumens	
	Old Rating	New Rating
400-watt E-H1	20,000	21,000
400-watt J-H1	19,000	20,000

And there are similar high increases for *eleven* other popular Westinghouse Mercury Lamps.

But that's only half the story! For not only do these new, improved Westinghouse Mercury Lamps give increased light output to start with, they also *maintain* higher light output throughout their long life. For example . . .

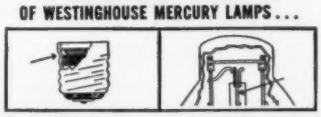
Lamp	Approximate Lumens at 4000 Hours	
	Old	New
400-watt E-H1	15,000	15,800
400-watt J-H1	14,000	14,700

These new Westinghouse Mercury Lamps are absolutely unequalled for *long useful life*. So today, even more than before, Westinghouse Mercury Lamps are by far your best buy for all high-intensity lighting.

This significant advance in Westinghouse Mercury Lamp performance is further evidence of Westinghouse leadership in mercury lighting—one more proof that Westinghouse Mercury Lamps give you *"more for your money in mercury light."*

Westinghouse Guarantees the service life of all its widely used types of quartz mercury lamps. For full details call your Westinghouse Lamp Representative—or write Westinghouse Lamp Div., Dept. AC-4, Bloomfield, N. J. You can be *sure* . . . if it's Westinghouse.

TYPICAL MONEY-SAVING FEATURES OF WESTINGHOUSE MERCURY LAMPS...



Hi-Temp life-time-tight bases—non deteriorating bonding material eliminates costly problems of loose bases, cracked bulbs, breakage when lamps are removed from sockets.

Molybdenum Ribbon Seals—just .005" thick—permit easy expansion and contraction of lead-in wires and bulb material. Result: longer lamp life, fewer early failures.

WATCH WESTINGHOUSE *WHERE* **BIG** *THINGS ARE HAPPENING FOR* **YOU!**

Ask about new Westinghouse WEATHER DUTY (TM) Mercury Lamps!

Catalogs for You

Write directly to the manufacturers, or use Post Card at P. 52

Cuts Mowing Costs

59 All your city's park department needs to handle every maintenance problem is an economical Gravely tractor. This efficient unit may be used to power 21 maintenance tools including a rotary, reel or sickle mower, and an optional leaf mulcher assembly. Other attachments include a snowblower, snow plow, and power brush. For free catalog, *Power Vs. Drudgery*, write GRAVELY TRACTORS, INC., BOX 73, DUNBAR, W. VA.

Valves and Sluice Gates for Water, Sewage Plants

60 This company offers a dependable line of valves, sluice and shear gates, indicator posts, hydrants and floorstands for all your city's water and sewage requirements. Also electric and hydraulic operating mechanisms. Get full information from THE CHAPMAN VALVE MFG. CO., INDIAN ORCHARD, MASS.

Fabrics for Police and Fire Uniforms

61 Franklin's famous 373 range of genuine indigo wool dyed serges are made in all weights from 10 to 20 ounces. For free samples and specifications, write David E. Singer, sales agent, FRANKLIN WORSTED CO., 40 E. 34th ST., NEW YORK 16, N. Y.

Announcing the Model H/M

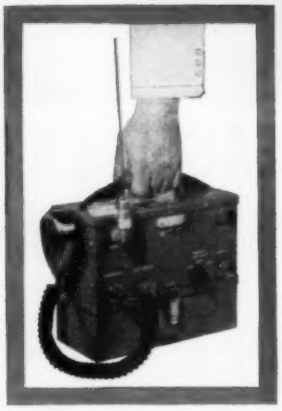
PAK-FONE

2-WAY RADIO

- HAND-CARRIED. EXTREMELY COMPACT.
- BUILT-IN LOUD SPEAKER. CONVENIENT MONITORING.
- RELAY SQUELCH. SILENCE BETWEEN CALLS.
- CONNECTOR FOR POWER SUPPLY. SAVES BATTERIES.
- WITH UPC-100, OPERATES FROM 6, 12, 24 VDC AND 117 VAC.
- ON-OFF INDICATOR LIGHT. AVOIDS RUN-DOWN BATTERIES.
- TOP PERFORMER IN ALL COMPETITIVE TESTS.
- A HEIMARK DESIGN. FCC AND FCDA DESIGNATIONS.

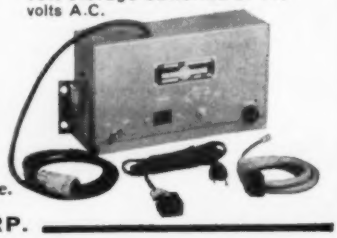
The Model H/M Pak-Fone is being widely accepted by Police and Fire Departments because it does not require holding a handset to the ear. Also, the annoying "rushing" characteristic of other hand carried portables on standby is eliminated by the use of a relay squelch.

Write or wire today for a demonstration in your community or send for literature.



Industrial Radio Universal Power Converter UPC-100

New power supply operates Pak-Fone and other portable 2-way radio equipment from 6, 12, and 24 volt storage batteries or 117 volts A.C.



ir INDUSTRIAL RADIO CORP.

428 N. Parkside Ave. • Chicago 44, Ill. • Phone: AUstin 7-8888

Sure-Fire Seal for Bell-and-Spigot Pipe

62 Here is the clamp with the sealed gasket that will guarantee bottle-tight joints in bell-and-spigot pipe—even under difficult, punishing conditions. Use the clamp when the pipe passes under railroads or highways, over bridges, in ground subject to vibration, or anywhere else where joint leakage may threaten. For full details, write M. B. SKINNER CO., SOUTH BEND, IND.

Puts Life into Traffic Lines

63 Reflective glass beads for marking traffic lines are doubly economical when applied through this "Free Flowing" bead dispenser. The dispenser is available free with the purchase of 2,000 pounds of Flex-O-Lite "Free Flow" reflective glass beads. For details on this interesting offer, write FLEX-O-LITE MFG. CORP., 8301 FLEX-O-LITE DR., P. O. BOX 3066, ST. LOUIS 23, MO.

Converts Rigid Tripod into Live-Boom Unit

64 Water and sewer crews used to the backward, old three-legged derrick, can change the machine into a live-boom unit that will put real speed into their water and sewer work. For details on a special conversion kit, 5700-C, write J. H. HOLAN CORP., 4100 W. 150th ST., CLEVELAND 11, OHIO.

Mercury-Vapor Lamps Breed Street Safety

65 To protect against traffic accidents, use a proved recipe—Amplex mercury-vapor lamps. The record clearly shows that when these lamps are on the job, you can expect fewer accidents, less pedestrian injuries, and a drop in the crime rate. To top it off, you can get twice as much light for the wattage consumed. For full information, write AMPLEX CORP., DEPT. AC-656, 111 WATER ST., BROOKLYN 1, N. Y.

Efficient Sewage Treatment for Small Communities

66 Now small communities can get "big city" sewage treatment efficiency at low cost with a Chicago "Pakage" sewage plant. The plant is designed for populations up to 5,000, and is easily operated without highly trained personnel. It is described in literature from CHICAGO PUMP CO., SEWAGE EQUIPMENT DIV., 622 DIVERSEY PARKWAY, CHICAGO 14, ILL.

For More Effective Street Illumination

67 Assure safe, effective street illumination with Holophane refractors. The prismatic design of these refractors helps distribute light uniformly, provides greater visibility distance, and gives more illumination per lighting dollar. For further facts on improved street lighting, write HOLOPHANE CO., INC., STREET LIGHTING DEPT., NEWARK, OHIO.

Asphalt for Paving and Maintenance Jobs

68 Whatever your city's asphalt requirements, they will be handled quickly and economically by the Byerlyte Corp. The firm offers primary products for street paving and patching jobs, and for waterproofing foundation walls, sidewalks and bridges. Also basic products such as asphalt flooring and paving blocks, sewer-joint compounds, and pipe-coating and culverts. Write BYERLYTE CORP., 2302 W. 3rd ST., CLEVELAND 13, OHIO.

(See p. 40 for more Bulletins)

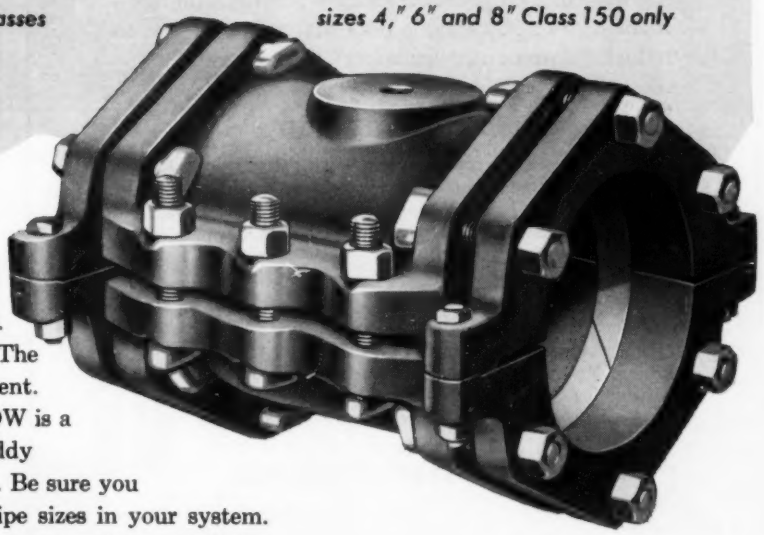
NOW from EDDY...

Mechanical Joint Split Sleeves

for repairing water mains...

CAST IRON MAINS
sizes 3" through 16" All Classes

ASBESTOS-CEMENT
sizes 4," 6" and 8" Class 150 only



Here's the fastest, most economical way to repair damaged water mains. Installation is a matter of minutes. The repair you make is positive, permanent. This is a reminder that RIGHT NOW is a good time to check your stock of Eddy mechanical joint split repair sleeves. Be sure you have some to match each of the pipe sizes in your system. Remember: Eddy repair sleeves come complete, ready for instant use, each with detailed instructions for installing . . . easily, quickly and with no tools other than a ratchet wrench. NOW is the time to order . . . or to mail the coupon if you'd like more information. No obligation, naturally.

Mail Coupon Now
for full facts

EDDY VALVE COMPANY

WATERFORD, NEW YORK

Eddy Valve Company
Waterford, N. Y.

Please send me complete information on Eddy Mechanical Joint Split Sleeves.
(please check which)

For: ☐ Cast iron ☐ Asbestos-cement

Name_____

Address_____

City_____ **Zone**____ **State**____

HOW TO LOCATE WATER LEAKS

...with Simplex Pitot Equipment

WHY not decrease your load and stop pumping to waste? Locate the hidden leaks which waste thousands of gallons per day per mile of main . . . far more than usually guess-timated!

Locating these leaks with Simplex Pitot Equipment costs only a tiny fraction of the value of the water being wasted. You get accurate flow records with minimum effort . . . valuable data that will help you to reduce "unaccounted-for water" to a minimum.

PITOT ROD

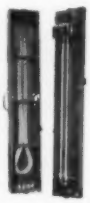
Simple, rugged and lightweight. Easily installed on any pipe or main. Special clamp holds tube firmly in position against water pressure.

Low coefficient gives high differential pressure for greatest accuracy.

MANOMETER

Quickly connects to a Simplex Pitot Rod with flexible tubing. You then have a simple, sensitive and inexpensive instrument for indicating rate of flow.

Can be used for wide flow ranges . . . low or high.



PITOT RECORDER

Connects easily to Pitot Rod. Eight-inch chart records flow data. Simple and rugged construction . . . no delicate mechanisms...yet sensitive and accurate.

Sturdy carrying case. Leveling feet. Reliable 7-day clock movement for chart. Accurately calibrated.

Get the Facts!

Free 20-page Technical Bulletin 1300. Full instructions for use and care of Pitot equipment. Seven pages of helpful formulae, tables, curves. Write to Simplex Valve & Meter Co., Dept. AC-7, 7 E. Orange St., Lancaster, Pa.

SIMPLEX®

VALVE AND METER COMPANY

Catalogs for You

Write directly to the manufacturers, or use Post Card at P. 52

Plastic Traffic Markers

69 Easily secured to concrete, asphalt or brick, plastic Nefslabs provide a long-wearing traffic line unaffected by changing weather conditions. The plastic traffic markers are available in a wide variety of shapes, sizes, thicknesses and colors. For complete information and prices, write J. W. NEFF LABORATORIES, INC., STOCKERTOWN 7, PA.

Makes "Pipe Pushing" An Easy Job

70 It's fast and simple to install water and sewer pipe underground when you're using a Speed-Thru continuous-stroke pipe pusher. One man places the Speed-Thru in the trench, operates two control levers, and the pipe is quickly installed. Get full information from MERCURY HYDRAULICS, INC., 2440 BLAKE ST., DENVER 5, COL.

Portable Tamper Speeds Street Patching Jobs

71 Use the efficient Vibra-Tamp for all kinds of tamping and finish work, and for patching streets, driveways, walks and railway crossings. Easily operated by one man, the self-propelled unit features speeds up to 50 feet per minute. It is equally effective for sand, gravel, chips and bituminous mixtures. Get full details from BARCO MFG. CO., 500 N. HOUGH ST., BARRINGTON, ILL.

Durable Uniforms for Police & Firemen

72 A long-wearing uniform fabric for policemen, firemen and other municipal employees features a special blend of dacron and wool. It is crease resistant, retains its shape longer, and wears well at such critical points as cuffs, pockets and elbows. For literature and samples, write AMEROTRON CORP., 1407 BROADWAY, NEW YORK 18, N. Y.

Easy-to-Operate Plug Valves

73 In water works and sewage plants, on asphalt and gas lines—wherever dead-tight shutoff is required, install dependable DeZurik plug valves. These valves are simple to operate, and require no lubrication. They are available from the DeZURIK SHOWER CO., 57 RIVERVIEW RD., SARTELL, MINN.

Tandem Rollers

74 Street compaction and other city jobs are greatly simplified by the use of these new medium and large-sized tandem rollers. Featured are 5-8, 8-10, 8-12 and 10-14 ton variable weight models. For *Bulletin No. HWT-525*, write HUBER-WARCO., MARION, OHIO.

Chlorine Feeder

75 Use this economical chlorine feeder in municipal water-works, sewage treatment plants and swimming pools. The Sterelator is easy to install, simple to operate, and inexpensive to maintain. It can be furnished for fully automatic, semi automatic, and manual control. For new *Sterelator Bulletins*, write EVERSON MFG. CORP., 203 W. HURON ST., CHICAGO 10, ILL.

(See p. 42 for more Bulletins)

"Has the power and weight we need for wide variety of work . . . including our 80-acre farm," says Earl Nevins, Superintendent for the City of Clovis, California.

NEW! International® 300 Utility tractor

now with POWER STEERING

Change tractor speed ON THE GO with revolutionary Torque Amplifier drive—while keeping pto speed constant with rotary (illustrated), side or rear-mounted cutter bar, or hammer-knife mower! TA provides 10 forward speeds.

Steer single-handed, maneuver in cramped quarters . . . keep the other hand free to control equipment! The new International 300 Utility with power steering gives the operator finger-ease control of the wheel, even with heaped half-yard bucket on a heavy-duty loader. He can load, doze, backfill, grade and level *on the go.* With up to 1,000 pounds greater built-in weight for traction and stamina, 300 Utility users report they *move up to 25 per cent more dirt* in a day than with lighter-weight outfits.

IH power steering blocks kickbacks from the front wheels, yet allows normal self-recovery. It is powered from the tractor's regular Hydra-Touch system, saving the cost of a separate pump. Get the "feel of the wheel" at your very first opportunity!

Phone your IH Dealer for a demonstration . . . look in the classified directory. For free specification folder, write International Harvester Company, Dept. AC-A7 P. O. Box 7333, Chicago 80, Illinois.

See Your

INTERNATIONAL HARVESTER Dealer

International Harvester products pay for themselves in use—McCormick Farm Equipment and Farmall Tractors . . . Motor Trucks . . . Crawler and Utility Tractors and Power Units—General Office, Chicago 1, Illinois

YOUR BRUSH DISPOSAL WILL BE
.....SAFER
.....FASTER
MORE ECONOMICAL

IF YOU USE ASPLUNDH CHIPPERS

Here's Why...

Only Asplundh Chippers have been engineered, developed and *proven by the world's largest tree company.* Among the many ways that you benefit when you use Asplundh Chippers are these:

FEATURE	BENEFIT TO YOU
Tapered Blades and Wedges	*Absolute safety.* Insures positive locking action. Tapered blades perform better, last longer; yet cost no more.
Simplicity in Design	To change blades requires *no* gauges or similar special equipment. Not necessary to remove half of housing to gain access. Operation can be performed right on the job in 20 minutes. Minimum of moving parts means less maintenance, less "down time", lower repair costs.
Flywheel	300 lb. flywheel assures *constant, uniform, faster* chipping action; eliminates engine slow-down; permits reduced size of power unit resulting in lower operating costs.

For complete information send coupon below. Ask for free demonstration. Fill in and mail coupon today.

ASPLUNDH CHIPPER COMPANY (Dept. C-3)
505 York Road, Jenkintown, Pa.

☐ Send FREE BOOKLET, *The Modern Approach to the Brush Problem*
☐ Arrange free demonstration.

NAME_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

BY ACTUAL TEST THE FASTEST CHIPPER MADE

Catalogs for You

Write directly to the manufacturers, or use Post Card at P. 52

For Those Difficult Sewage Pumping Jobs

76 You can quit puzzling over how you are going to supply sewerage to those small subdivisions by putting your order in for a Smith and Loveless Mon-O-Ject sewage lift station. These tough little factory-assembled units operate on the proved pneumatic ejector principle. You can install them quickly and easily in capacities as small as 20 gpm. You can place them underground, out of sight, and eliminate neighborhood objections to pumping stations. Write SMITH and LOVELESS, INC., DEPT. 10, P. O. BOX 8172, KANSAS CITY, MO.

A Year-Round Maintenance Unit

77 Maintaining streets and airports all-year-round is easy when you have a Wausau truck patrol ice planer. Traveling at speeds up to 20 miles per hour, the unit cuts and grades all types of gravel and dirt roads; eliminates ruts, holes and washboards. It can also be used to plane, break and remove ice and hard-packed snow. Write WAUSAU IRON WORKS, WAUSAU, WIS.

Reflectorize Your Own Traffic Signs

78 It's easy to reflectorize traffic signs when you're working with Grotelite reflective sheeting. The sheeting is easily applied by vacuum applicator or pressure roller. You just place Grotelite sheeting over the prepared sign surface, apply pressure, and the job is done. For *Catalog No. 754-T*, write THE GROTE MFG. CO., INC., BELLEVUE, KY.

Efficient Snow Plows

79 Don't wait for the first snowfall to discover the inadequacy of your city's snow removal equipment. The Jarp Corp. is now featuring a line of dependable snow plows for municipal trucks of ½- to 4-ton capacity. Models are available for heavy-duty plowing and for high-speed work. Get full facts from THE JARP CORP., WAUSAU, WIS.

Complaint-Free Refuse Trucks

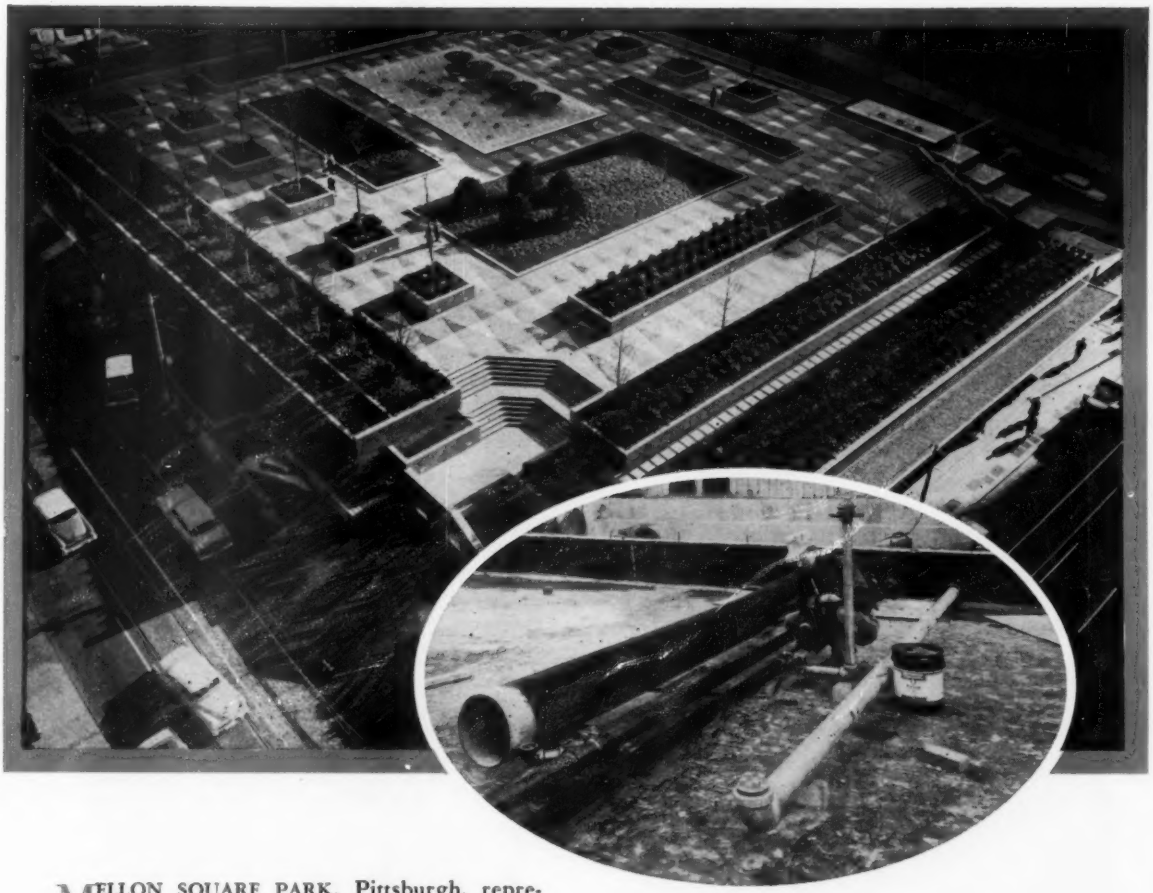
80 The record speaks for itself. With M-B bodies on your refuse trucks, the crews can work faster; they can load anything, even big, bulky, hard-to-handle trash; the men are safe; and they don't need to be "hydraulic engineers" to do their work. With these bodies, you can also use smaller, less expensive truck chassis. Write M-B CORP., 1612 WISCONSIN AVE., NEW HOLSTEIN, WIS.

Simplifies Control of Water, Sewage Systems

81 Hammarlund COC equipment enables you to supervise your entire water or sewage system from a single, central control location. With the COC system you can supervise and record flow, pressure and level at all stations. By means of a central control board, you can start and stop pumps, open and close valves proportionally, and perform many other functions. Get full details from HAMMARLUND MFG. CO., INC., 460 W. 34th ST., NEW YORK 1, N. Y.

(See p. 46 for more Bulletins)

PITT CHEM COATINGS SAFEGUARD VITAL UNITS OF UNIQUE GARAGE-PARK



MELLON SQUARE PARK, Pittsburgh, represents a unique achievement in modern city planning. The top level is a beautiful park with sparkling fountains, cascading pools and more than 25,000 specimen trees, shrubs and flowers. Beneath is one street level and five underground levels to provide parking for thousands of busy shoppers and workers.

Protecting vital structural units of the park against moisture and other types of corrosion called for a long-lasting, heavy-duty protective coating. That's why *Pitt Chem Coal Tar Coatings* were selected for corrosion trouble-spots such as the water mains and flood light standards.

Pitt Chem Coatings get the call for the tough jobs because they last far longer than ordinary paints . . . yet they cost no more per gallon. They are easy and economical to apply by brush or spray, and form a tight, lasting bond with metal, masonry, concrete and stone. *No other material does such a complete job of protection at so little cost.*

What's *your* corrosion problem? Condensation? Industrial fumes? Acid or alkali spillage? A *Pitt Chem* corrosion engineer will gladly tackle your problem and help you to solve it economically. *Write us about it today!*

WSW 6173

COAL CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

OUR FUTURE IS (and in your

MODERNIZED **cast iron**

IN THE SKIES... hands, too)

To keep pace with America's constantly increasing demand for water, you need the help of the elements. And the public.

We can lend a hand there.

Our national advertising stresses advance planning of water facilities . . . warns millions of Americans—homeowners, apartment dwellers, industrialists about waste, pollution, the need for efficient water systems. It points out the need for new water sources, adequate treatment and distribution, realistic water rates, far-sighted water legislation . . . all the facts the public must know to cooperate intelligently with you and your fellow water officials in your difficult job of keeping America plentifully supplied with water—now and in the future.

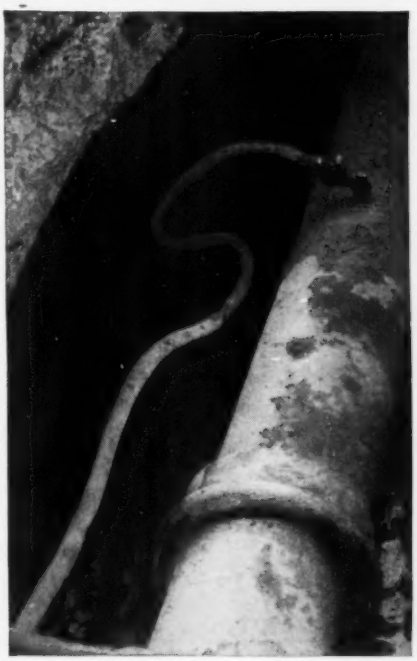
CAST IRON PIPE. Serves for Centuries!

For over 70 public utilities in the United States and Canada, cast iron mains laid over a century ago are still serving dependably. This long, trouble-free service means lower maintenance costs . . . fewer tax dollars expended . . . fewer headaches for the waterworks officials who specify cast iron.

And today, modernized cast iron pipe, centrifugally cast, is even more rugged, uniform, durable. When needed, it's available with cement-lining to assure sustained carrying capacity throughout its generations of service.

The next time you plan extensions to your distribution system remember, cast iron pipe means the ultimate in long term reliability and economy.

Cast Iron Pipe Research Association, Thos. F. Wolfe, Managing Director, 122 So. Michigan Ave., Chicago 3, Illinois.



This rugged old cast iron water main, still serving and saving tax dollars for the citizens of *Detroit, Michigan,* is now in its 115th year of dependable service.

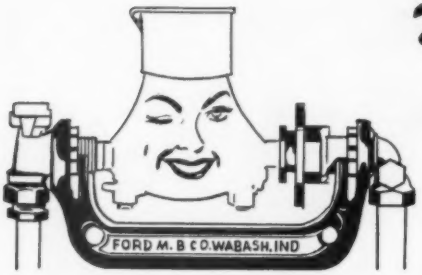
CAST Q IRON

The Q-Check stencilled on pipe is the Registered Service Mark of the Cast Iron Pipe Research Association.

pipe FOR MODERN WATER WORKS

Fordin' Along...

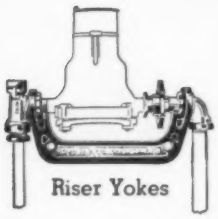
We commonly refer to water as H_2O, which indicates that each molecule is made up of one oxygen and two hydrogen atoms, but we find it difficult to comprehend the fantastic minuteness of the molecule itself. For example, there are more molecules in an ounce of water than there are ounces in all the oceans and seas of the earth. Assuming a reasonable amount of dispersion in almost two thousand years, every glass of water contains thousands of molecules from the six stone waterpots mentioned in John II as holding first water and then wine at the wedding feast at Cana in Galilee.



Meters Play

EASY-TO-GET

***when they wear* FORD YOKES**



Riser Yokes

Angle Yokes

Straight Line Yokes

Dress a meter up in a Ford Yoke and see what a difference it makes. No more fighting misalignment of pipes or wrong spacing between couplings. Just an easy twist of the wrist and you've got your meter.

Ask your meter man. He'll tell you that an easy-to-get meter can be kept more accurate so that it lasts longer and earns more revenue. Millions of Ford Yokes are in use.

Send for the Ford Catalog and learn more about getting your meter's worth.

FORD

FOR BETTER WATER SERVICES

THE FORD METER BOX COMPANY, INC. Wabash, Indiana

Catalogs for You

Write directly to the manufacturers, or use Post Card at P. 52

Water and Sewer Main Cleaning Simplified

82 Don't let corroded water mains get you down, and don't get upset by plugged-up sewer pipe. Ace Pipe Cleaning, Inc., will clean any sewer or water pipe—underground, above ground, or overhead—quickly and economically. For complete information, write ACE PIPE CLEANING, INC., 3513 E. 18th ST., KANSAS CITY, MO.

Hydraulic Backhoe Attaches To Fordson-Major Tractors

83 For low-cost, high-production excavating, equip your Fordson-Major tractor with this new hydraulic backhoe attachment. The Sherman Major power digger digs 12½ feet below grade, and can dig a plum wall three feet deep at an extended reach 17 feet-9 inches behind the rear axle of the tractor. It carries a full bucket 8 feet-8 inches high for easy loading. Write SHERMAN PRODUCTS, INC., 3200 W. 14 MILE RD., ROYAL OAK, MICH.

Fire Hydrants

84 You can get the dependable B-50-B fire hydrant in a wide range of types to meet your city's particular installation requirements. The B-50-B features "O" ring seals which provide a dry-top, packless hydrant — minimizing service and maintenance needs. It is fully discussed in *Bulletin* 5403 from DARLING VALVE & MFG. CO., WILLIAMSPORT 10, PA.

New Rotary Cutter for Parks & Airports

85 Designed by the BMB CO., INC., 319-21 NEW YORK AVE., HOLTON, KAN., this new 5-foot "Special" rotary cutter provides an easy, inexpensive way to cut undergrowth and pulverize stubble in parks, golf courses, and airports. The light-weight cutter is easy to assemble and simple to operate. It has a 3-point hookup, and attaches quickly to any type tractor. Write for details.

Quick-Drying Traffic Lines

86 In addition to drying faster, traffic lines painted with this new thermo-compound last longer, and are economical to maintain. Perma-Line is quickly and easily applied, and is reported to save municipalities as much as 40% in traffic stripe costs. For more detailed information, write VEON CHEMICAL CORP., 22-09 BRIDGE PLAZA NORTH, LONG ISLAND CITY 1, N. Y.

Coin Handling Machines

87 The fastest way to get parking meter revenues from the curb to coin wrappers or bags is with Brandt coin handling machines. These machines sort, count, bag or package the coins quickly and accurately. They are fully described in an informative booklet from BRANDT AUTOMATIC CASHIER CO., WATERTOWN, WIS.

Cast Iron Pipe

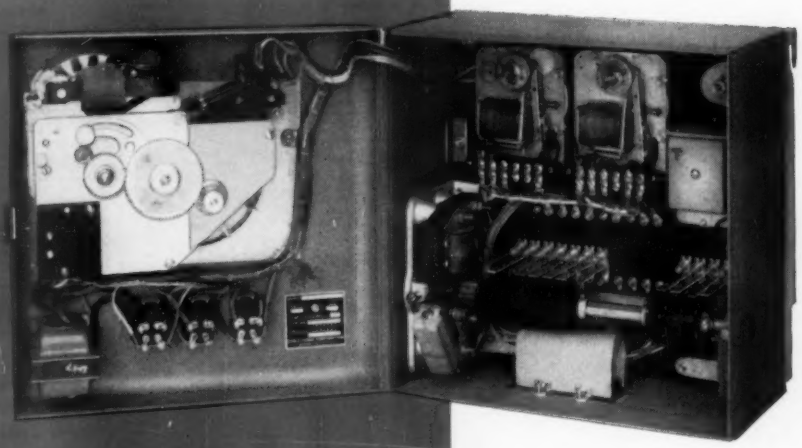
88 For dependable, trouble-free water lines, specify Super De Lavaud cast-iron pipe. This pipe is available in modern long lengths, in diameters ranging from 3 to 24 inches. Bell and spigot, roll-on-joint, flanged, and mechanical joint pipe are offered. Write ALABAMA PIPE CO., ANNISTON, ALA.

(See p. 48 for more Bulletins)

All functions without tubes

new

EAGLE
mechanical
semi-actuated
controller



This new vehicle-actuated controller performs *all* functions of electronic controls — including time extension. Yet it contains no tubes, no electronic circuits. It's completely mechanical. All electronic parts have been replaced by simple, synchronous motor driven timers. That means dependable EAGLE timers and EAGLE synchronous disk motors — rugged, heavy duty. So maintenance is low and easy to perform.

6 signal circuits are furnished as standard. Space and wiring are provided for 5 more signal circuits. Additional intervals are provided simply by adding keys to the timing dial.

Check these "plus" benefits: There is less wear, as all components are completely idle during Main Street green dwell period • Special color sequences may be added at a fraction of ordinary cost • Electrically and mechanically interchangeable with Eagle ET40 and ET41 Semi-Actuated, electronic controllers.

MODEL ETS217

EAGLE EQUIPMENT SAVES LIVES . . . SAVES TIME

EAGLE
SIGNAL CORPORATION
Municipal Division
Moline, Illinois

FREE BULLETIN . . . AND DEMONSTRATION

EAGLE SIGNAL CORPORATION
Traffic Signal Division Dept. AC-756
MOLINE, ILLINOIS

☐ Send free bulletin with full data on your new Mechanical Semi-Actuated Controller ETS217.
☐ Give me a demonstration of this controller.

NAME AND TITLE _____
MUNICIPALITY _____
FULL ADDRESS _____

Catalogs for You

Write directly to the manufacturers, or use Post Card at P. 52

Water and Sewer Pipe in Long Lengths

89 The long lengths of this concrete water and sewer pipe speed installation time by reducing handling and joint making. The pipe provides sustained high-flow capacity, and cuts operation and maintenance costs. Its rubber and steel Amseal joints assure a water-tight seal against infiltration and leakage. Write AMERICAN-MARIETTA CO., CONCRETE PRODUCTS DIV., 101 E. ONTARIO ST., CHICAGO 11, ILL.

Stop Drunken Driving

90 An increasing number of municipal police departments throughout the country are relying on the Breathalyzer to put an end to drunken driving. The automatic machine detects intoxication through chemical breath analysis. It is accurate, simple and foolproof. Get full information from STEPHENSON CORP., RED BANK, N. J.

Chain Link Fence

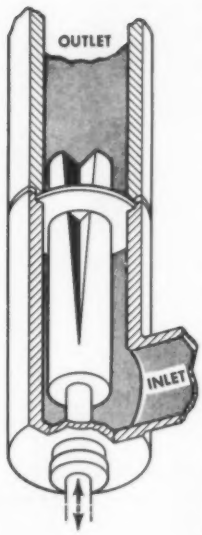
91 *Planned Protection*, an informative manual from the Continental Steel Corp., presents a variety of chain link fence designs to meet any municipal fencing requirement. There is a wide selection of styles, heights, types of top construction, gates and accessories. For your copy, write CONTINENTAL STEEL CORP., KOKOMO, IND.

THE WALLACE & TIERNAN

V-NOTCH

variable-orifice

... a new concept for chlorinator control



The W&T V-notch Variable-Orifice is the heart of a new chlorinator control system. With the system, a constant differential vacuum is maintained across the V-notch Variable-Orifice and the flow of chlorine gas is adjusted by varying the area of the orifice.

The W&T V-notch Variable-Orifice has these features:

- Wide range adjustment of chlorine flow
- Excellent reproducibility of flow by a simple adjustment
- Same % accuracy over entire wide flow range

As can be seen in the diagram, the V-notch Variable-Orifice is formed by a cylindrical plug positioned inside a matched, circular ring. A V-shaped groove is machined along the length of the plug. The groove starts near one end of the plug and gradually enlarges to its maximum width and depth at the other end of the plug. The V-notch Orifice is formed at the intersection of the grooved plug and the matched ring. The orifice area is varied simply and positively by positioning the plug backward or forward inside the fixed ring.

The V-notch Variable-Orifice is just one design feature of the new W&T V-notch line of Chlorinators. Get all the facts about the W&T V-notch chlorinators before you buy chlorination equipment.

WALLACE & TIERNAN INCORPORATED

25 MAIN STREET, BELLEVILLE 9, NEW JERSEY

S-108

Simplifies Asphalt Paving

92 Instructions for the design of mixes for hot-mix asphalt paving are contained in a new manual from THE ASPHALT INSTITUTE, ASPHALT INSTITUTE BLDG., COLLEGE PARK, MD. Test methods include the Marshall, Hveem, Hubbard-Field and Smith Triaxial methods. Test procedure and interpretation of test data are provided for each mix design method. Copies of *Mix Design Methods for Hot-Mix Asphalt Paving* are available at $1.00.

Modern Sewage Treatment

93 Whatever the size of your city's sewage treatment plant, the type of treatment desired, or local conditions involved, Dorr-Oliver has the equipment to do the job efficiently and economically. A new bulletin, *Dorr-Oliver Equipment and Methods for Modern Sewage Treatment*, describes the types, sizes applications and operation of major D-O equipment. For your copy, write DORR-OLIVER, INC., STAMFORD, CONN.

Post Ledgers Faster

94 Extra savings in accounting operations are often made through efficient handling of accessory items such as ledger sheets or cards. A new folder pictures the latest in ledger trays for efficient use of the cards and for their protection. Also discussed are time-saving ledger indexing systems for getting top posting speeds. For further information, write REMINGTON RAND DIV., SPERRY RAND CORP., 315 FOURTH AVE., NEW YORK 10, N. Y.

Street-Lighting Standards

95 These tubular steel standards for street lighting, flood lighting and traffic signal installations are designed for years of service with minimum upkeep and replacement. They are described and illustrated in *Catalog SL* from THE ELRECO CORP., 2917 CORMANY AVE., CINCINNATI 25, OHIO.

Loyal Order of Manhole Sniffers

96 A membership certificate in this Order is yours for the asking from THE BIONETIC DIV., RELIANCE CHEMICALS CORP., P. O. BOX 6724, HOUSTON 5, TEX. Too, the company will send you the following Bionetic Tech Talks: Sludge Digestion, Cleaning Collection Systems, Care of Trickling Filters, and Odor and Grease Removal. Its engineers will give you practical advice on how to use Bionetics to correct odor problems in sewer systems and treatment plants.

Outboard Motors

97 Adequate outboard power for municipal service is provided by this new line of Evinrude Aquasonic motors. These efficient outboard motors are designed for smooth, quiet operation and dependable performance. They are described and illustrated in a new booklet from EVINRUDE MOTORS, DIV. OF OUTBOARD, MARINE & MFG. CO., 4626 N. 27th ST., MILWAUKEE 16, WIS.

Open Steel Flooring and Stair Treads

98 Make sure the flooring in your municipal power plant is strong, safe and easy to keep clean, by specifying Bates Grates open steel flooring and stair treads. These grates feature Hex crossbars of hot-rolled steel fillet-welded to the main bars. This design assures an extra margin of strength and safety. Get full details from WALTER BATES CO., INC., JOLIET, ILL.

Ruggedness Built In Makes Wagner Stand Out

"Torture Tested" Wagner Tractor Equipment

Gives Longer Life—Reduces Down-Time and Repair Cost

Rugged work requires rugged equipment and that's exactly what you get with Wagner "Torture Tested" tractor equipment. Every stress point is *doubly* protected. Heavy-duty construction keeps maintenance costs way down and productive time way up. Wagner equipment stays on the job day in and day out working for you and more profits. No wonder Wagner tractor equipment is recognized as so far superior it has become No. 1 in America by a wide, wide margin. See all the rugged features of Wagner tractor equipment and the numerous attachments that can make a tractor your most versatile piece of equipment. Get proven dependability no matter how tough the job. Get Wagner tractor equipment today.

wagner
TRACTOR EQUIPMENT

WAGNER IRON WORKS, 1905 South 1st St., Milwaukee 1, Wis. Dept. 1308

Send me more information on Wagner Tractor Equipment for a ..... tractor.
(make)

NAME .....

COMPANY .....

ADDRESS .....

CITY ..... STATE .....

"WAGNER BUILT" MEANS "BETTER BUILT" FOR OVER 105 YEARS

the finisher that has laid a million miles of superior pavement

According to conservative estimates, the thousands of Barber-Greene Finishers throughout the world have started on their second million miles. This million miles has been laid under every conceivable condition, on all types of base, with all types of mix.

The many exclusive features of the Barber-Greene account for this performance record:

Top paving speed: The Barber-Greene will lay any mix as fast as any paving machine now in use with the same surface quality. Widest choice of laying speeds, including the lower speeds needed for difficult mixes, means every job can be done at the maximum speed.

Positive traction: Crawler mounting assures positive traction and steering control even while pushing loaded trucks up steep grades, on slippery primes or on soft bases.

Superior maneuverability: Short length and crawler mounting save valuable time in fast maneuvering or turning around, even in narrow streets or confined areas.

Ease of control: Operator has unrestricted view of truck dumping, material level in spreading screws, and finished mat.

Time-saving hopper: Receiving hopper is amply wide for fast truck changes and easy discharge, without spillage.

World-wide service and parts: Available from local stocks on short notice.

56-14-F

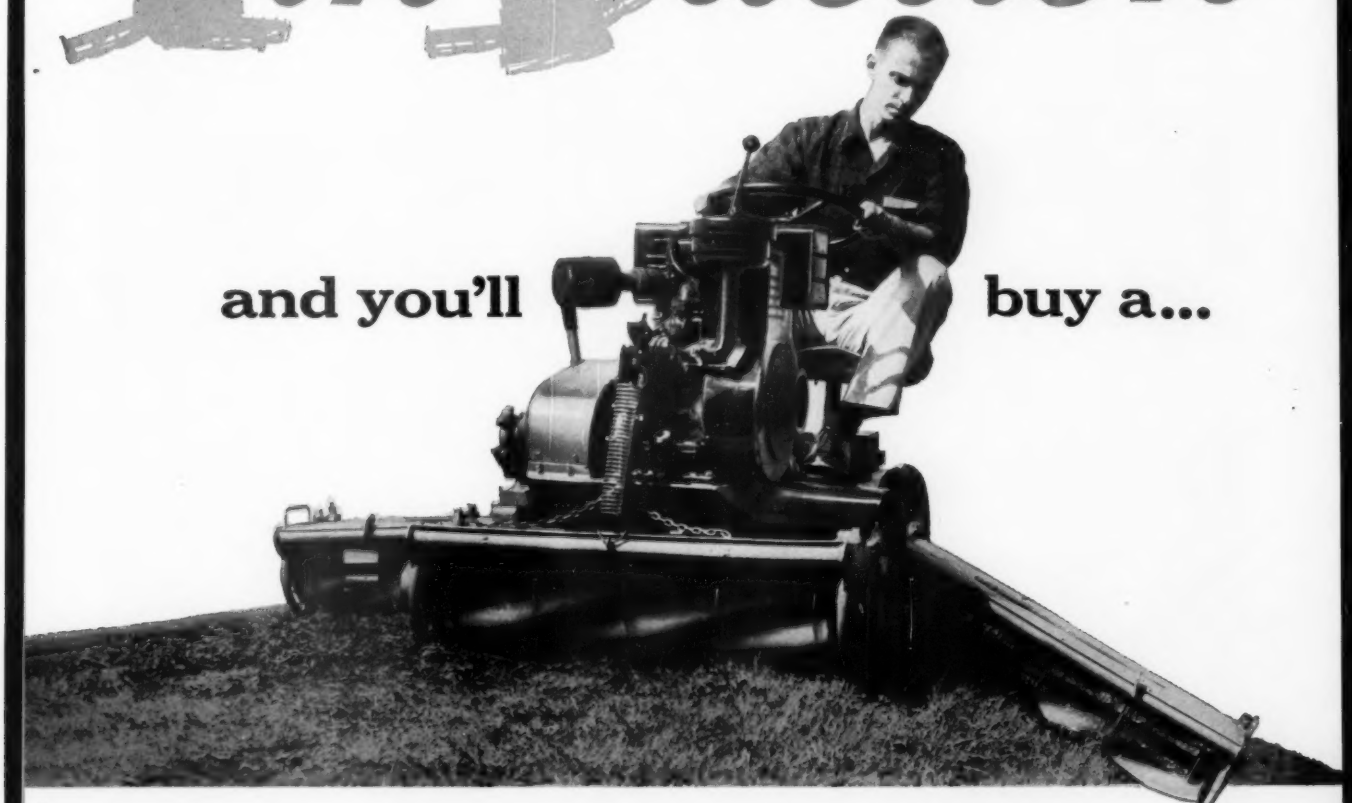
Write for literature on the finisher that handles all your paving jobs at less cost.

Barber-Greene BG

AURORA, ILLINOIS, U.S.A.

CONVEYORS . . . LOADERS . . . DITCHERS . . . ASPHALT PAVING EQUIPMENT

see 'em all in action



and you'll buy a...

WORTHINGTON TRIPLEX

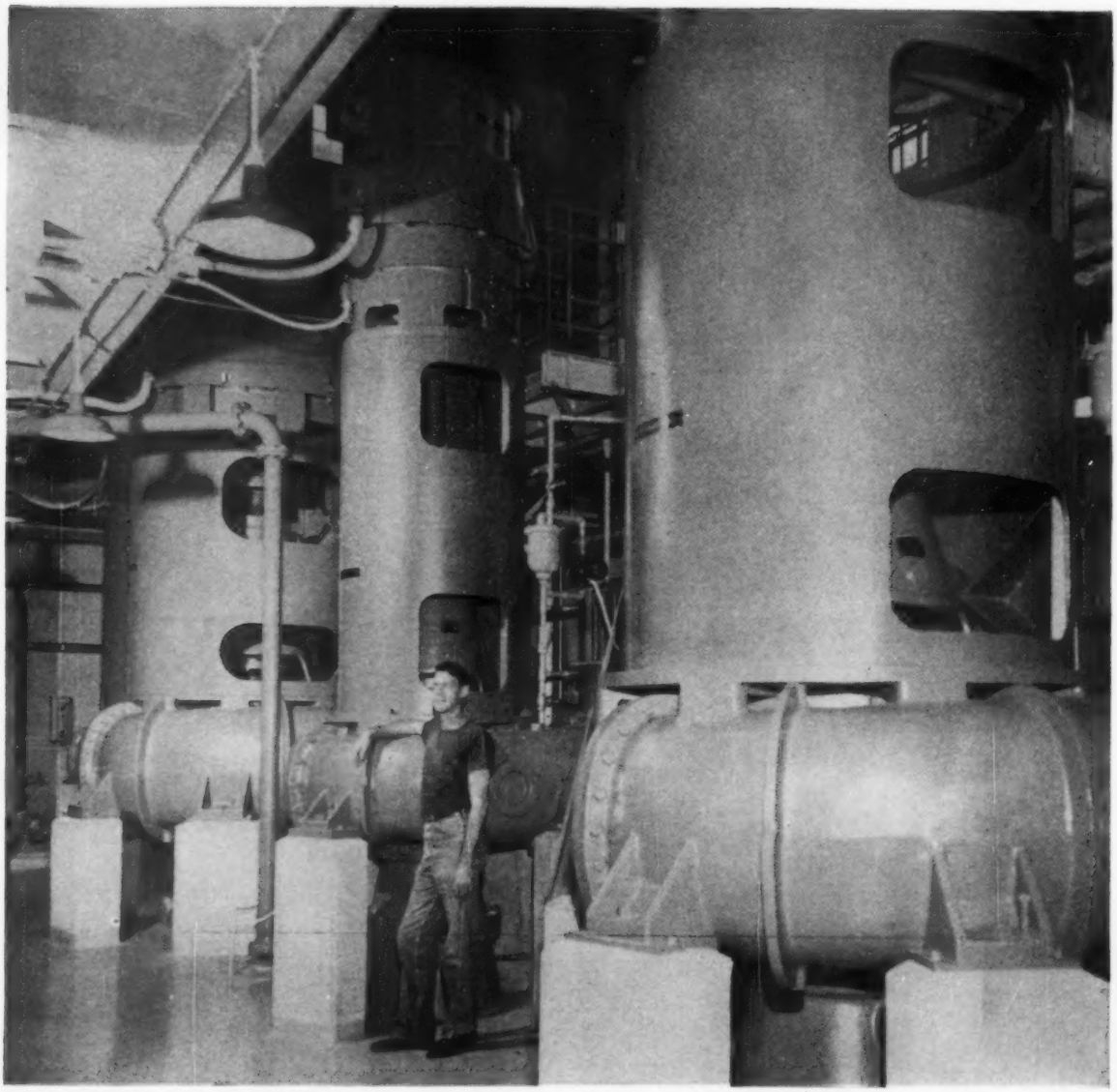
You should have a demonstration on your own grounds before you buy any mower! And when you do . . . *do your own testing!* Set *all* the machines side-by-side and compare them. Drive the others . . . then try the Worthington Triplex. There's a big difference. See how easily the rugged 8.4 hp engine starts. Note the transmission with a positive reverse and three forward speeds that gives you everything from a crawl to 8 mph . . . gives the unit everything from putting green frequency to big, fast, three-gang unit capacity. Watch it mow, effortlessly, right up 36% slopes. Look back at the big 85" cutting swath that no other machines can equal and see the clean, even cut. Make a cutting height change with Worthington's exclusive, positive-locking, vernier-scale adjustment. Compare the three big 30" full size 8" diameter reels with other types. Here's a mower that can cut, in one hour, up to 6½ acres . . . even the new Bermudas and clover don't slow it down! This is the mower that's built for long service life and low maintenance. This is the machine for you. You can have a demonstration of the Worthington Triplex any time and anywhere you want it. See and try the Worthington Triplex. Prove to yourself its superiority.

Every Worthington Dealer is a Demonstration Dealer— ask for your demonstration today!

WORTHINGTON MOWER COMPANY

STROUDSBURG, PA. • DIVISION OF JACOBSEN MANUFACTURING COMPANY

WORTHINGTON JACOBSEN JOHNSTON



24", 30", and 36" Fairbanks-Morse "Angleflow" pumps in Tampa's Krause St. station. Consulting Engineer—Greeley and Hansen, Chicago.

Master Plan for Tampa

To eliminate a serious bay pollution problem, Tampa has expanded its sewage treatment and disposal facilities by doubling the area served and connecting a 78% increase in population. The $22 million investment includes a 36 m.g.d. treatment plant, six new pumping stations with 27 new Fairbanks-Morse sewage pumps. There are pumps in the Fairbanks-Morse line to move any magnitude of municipal water supply at any appropriate pressure, and other pumps to meet ordinary or unusual problems of wastes treatment and disposal. A Fairbanks-Morse hydraulics engineer will be happy to work with your consulting engineer in specifying the right pump for your specific job. Fairbanks, Morse & Co., Dept. AC-7, 600 So. Michigan Ave., Chicago 5, Ill.

FAIRBANKS-MORSE

a name worth remembering when you want the BEST

PUMPS • SCALES • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • RAIL CARS • HOME WATER SERVICE EQUIPMENT • MOWERS • MAGNETOS

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THE AMERICAN CITY MAGAZINE

470 FOURTH AVENUE

NEW YORK 16, N. Y.

If you need information on any type of municipal service or equipment, these reply cards will get action in a hurry.

To THE AMERICAN CITY's Catalog Supply Department:
Please send literature on items numbered as follows, starting on Page 30:

1	8	15	22	29	36	43	50	57	64	71	78	85	92
2	9	16	23	30	37	44	51	58	65	72	79	86	93
3	10	17	24	31	38	45	52	59	66	73	80	87	94
4	11	18	25	32	39	46	53	60	67	74	81	88	95
5	12	19	26	33	40	47	54	61	68	75	82	89	96
6	13	20	27	34	41	48	55	62	69	76	83	90	97
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A Listing of Your Business Connection is Important

To THE AMERICAN CITY's Catalog Supply Department:

Please send me further information on products described in "Purchasing News" section beginning on page 213, as circled below:

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741	746	751	756	761	766	771	776
742	747	752	757	762	767	772	777
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A Listing of Your Business Connection is Important

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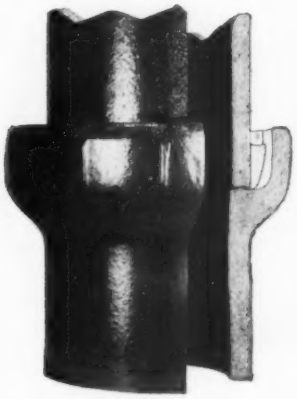
470 FOURTH AVENUE

NEW YORK 16, N. Y.

TO SAVE TIME AND EFFORT BY USING THESE BUSINESS REPLY CARDS WHEN YOU WANT ADDED INFORMATION ON ANY PRODUCT OR SERVICE MENTIONED OR ADVERTISED IN THIS ISSUE.

AMVIT* JOINTED CLAY PIPE gains wide acceptance, more than 60 major installations completed in 1955



Never before has a new product gained such wide acceptance and usage in such a short period of time.

In the first year since Amvit Jointed Clay Pipe was introduced more than 60 major installations have been completed with outstanding results. Such pioneer cities as Dayton, Ohio, Camden, New Jersey, Ostego, Michigan, Victor, New York, have installed their second and third Amvit Jointed sanitary lines.

Prevents Infiltration

Field tests from these installations show that ground water infiltration can be controlled and prevented—thus reducing pumping and treatment plant costs. Amvit is a compression type joint on the ball and socket principle. Nothing can enter the line after it is complete.

Quick Installation Saves Labor

Since no other material such as caulking, joint compound, hot-pots or ladles are needed to make the Amvit Joint, installation is quick and easy. The joint is on the pipe delivered to the job ready to use. Savings with Amvit Jointed Clay Pipe mean *lower cost of pipe in place* when the line must meet a rigid test.

Amvit Jointed Clay Pipe, in sizes 4" through 24", together with all fittings is available for immediate delivery in the Northeast and Central States.

For more information, write or call American Vitrified Products Company, National City Bank Building, Cleveland, Ohio, or our office nearest you.

Indiana

New Jersey

Michigan

Wisconsin

Illinois

*T M. Registered. Patents Pending

SINCE 1900

AMERICAN

American Vitrified Products Company

CLEVELAND, OHIO

MANUFACTURERS of: Clay pipe, flue liners, clay liner plates and concrete pipe.

Plants Across the Nation...Brazil, Indiana • Chicago, Illinois • Cleveland, Ohio • Crawfordsville, Indiana • Detroit, Michigan • East Liverpool, Ohio Fenton, Michigan • Grand Ledge, Michigan • Lisbon, Ohio • Los Angeles, California • Milwaukee, Wisconsin • South Bend, Indiana • Uhrichsville, Ohio

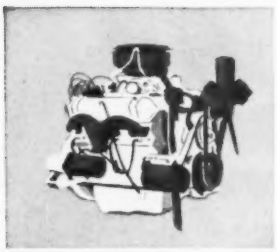
For any Public Works Job . . .

Only FORD TRUCKS give you all these money-saving features!

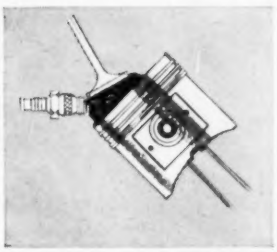
More power – plus a combination of long-life features no other truck engines offer!

Lifeguard Design... exclusive safety features found in no other truck!

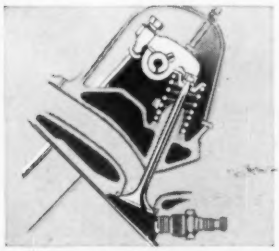
More load-carrying ability... more money-making capacity from the ground up!



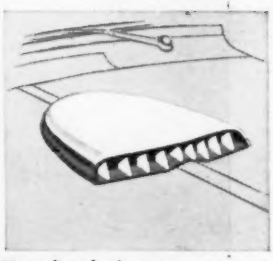
Now! Increased horsepower gets jobs done faster—with more efficiency. Only Ford Trucks offer modern Short Stroke power in every model—and at no extra cost!



New! The higher compression ratios give still finer performance with regular gasoline. Only Ford lets you choose from *seven* V-8's and a Six!



New "multi-mile" valve combination for heavy-duty engines, includes new sodium-cooled exhaust valves, new self-sealing dished-type intake valves.

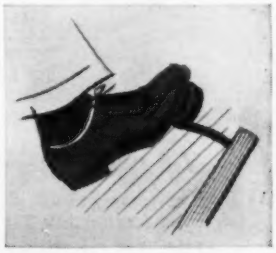


New hood air scoop, 4-barrel carburetor, and dual exhaust system available on Series 750 and up, for extra reserve power. More pull on hills, safer passing!

New deep-center Lifeguard steering wheel helps protect driver from contact with steering column in case of accident. *Only Ford Trucks have it!*

New Lifeguard door latches have double grip, give added protection against doors springing open in an accident. Only Ford Trucks have this safety feature!

New Ford seat belts greatly reduce your chances of getting seriously hurt in an accident, by holding you firmly in your seat. Available at low additional cost.



Biggest brakes in the ½-ton field! Ford light-duty models for '56 have new, thicker brake linings for up to 33% longer life. Power brakes, low added cost.

Now, payload increases up to one ton! Bigger payloads right down the line. New Ford T-800, for example, *hauls up to 3,000 lbs.* more than most 6-wheelers!

New! 8-ft. Pickup body, available on ½-ton Model F-100, has biggest loadspace of *any* half-tonner—65.4 cu. ft.! 6½-ft. Pickup box is standard. GVW 5,000 lbs.

New tubeless tires on every Ford model run 25° cooler, give extra mileage, resist punctures and blowouts. Standard at no extra cost!

FORD TRUCKS LAST LONGER

BIG FLEET OWNERS BUY MORE FORD CARS AND TRUCKS THAN ANY OTHER MAKE

Now! New Heavy-Duty V-8's!

With the most GO under any truck hood!

V-8 power to cut your costs!

These new 206, 226, 257 hp. modern truck V-8's in the new INTERNATIONAL V-Line have "built-in" reserve power that gets your biggest loads moving *fast* . . . a lively response that keeps them rolling with shifting greatly reduced, even on the most rugged off-highway operations. You save operating costs and you save trip time.

In short, the new INTERNATIONAL V-Line is built to set new highs in your profit column!

Tested and proved as no other trucks have ever been!

Developed and tested in the lab, then put through more than 1,000,000 test-track miles, and in 2,500,000 on-the-job miles in 39 different truck vocations.

These tests were made by profit-minded truckers with a gimlet-eye on mileage, hauling time and repair bills. Their conclusions—"GREAT, on every count!"

3 Great New INTERNATIONAL V-8 Engines!

	V-401	V-461	V-549
Displacement	400.9 Cu. In.	461 Cu. In.	549.7 Cu. In.
Bore and Stroke	4⅛ x 3¾	4⅛ x 4-5/16	4½ x 4-5/16
Maximum hp.	206 @ 3600	226 @ 3600	257 @ 3400
Maximum Torque	355 @ 1800-2000	420 @ 1600	505 @ 2000

Pressure Controlled-Flo Cooling! Full circulation, fully controlled. Cold weather by-pass.

"Wet" Replaceable Exhaust Valve Guides!

Exhaust Valve Faces and Seats of Stellite!

19 Pound Aluminum Flywheel Housing!

Get all the facts behind this great new truck story. Send for booklet "New Heavy-Duty V-8 Power Where You Need It Most." Write INTERNATIONAL HARVESTER COMPANY, P. O. Box 7333, Chicago 80, Illinois, or see your INTERNATIONAL Dealer or Branch.

INTERNATIONAL TRUCKS

All-Truck Built to save you the BIG money!

Motor Trucks • Crawler Tractors • Construction Equipment • McCormick® Farm Equipment and Farmall® Tractors

Ask the service man... he knows!

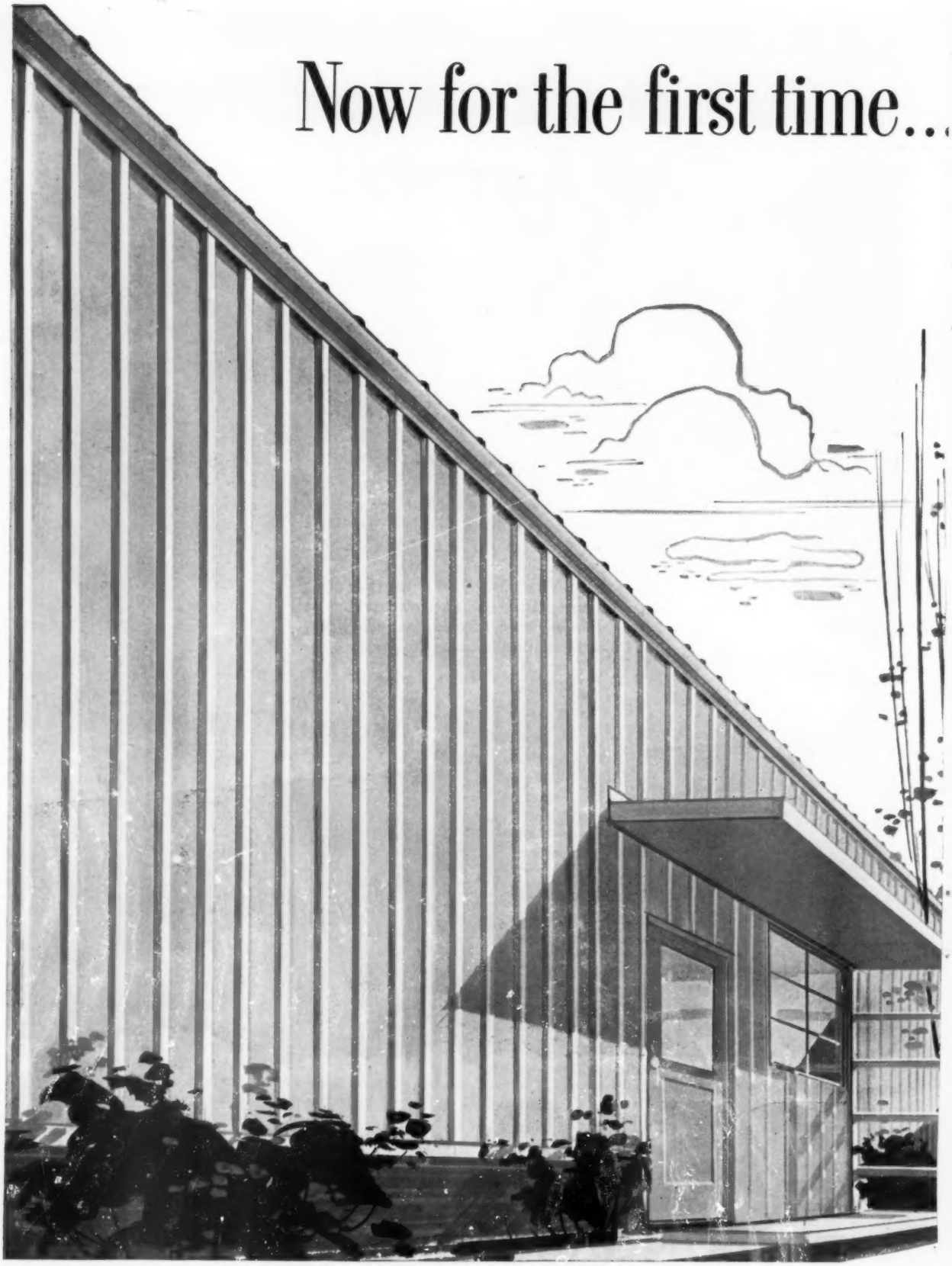
TRUE quality and precision, all-important to *satisfactory* parking meter performance, are hard things to prove with printed words. That's why we say . . . ask the service man—the man who "lives" with meters.

If he knows DUALS, he *knows* they're tops! Never built to price. They're engineered to outlaw trouble and inoperative time, come scorching heat or paralyzing cold. After all, it's *qualities* like these, not technical *words*, that really mean lowest cost and highest revenue.

But if you do want technical facts, we've got plenty to give you. And as to meters, there are Single Duals and Dubl-Duals . . . Duals that offer complete flexibility in coin combinations and timing... Duals perfect for *every* on-street or off-street job there is! Just ask for bulletins. Write to *The Dual Parking Meter Company* (Subsidiary of The Union Metal Manufacturing Co.), *Canton 2, Ohio.*

DUAL for extra value
PARKING METERS

Now for the first time...



all-steel buildings with a luxury look—yours with the new *Stran-Satin* wall

The eye-appeal of far more expensive materials, plus the strength and low cost of steel! That's what you get in the new Stran-Steel Rigid Frame building line with exclusive *Stran-Satin* wall. *Stran-Satin*, a new satin-finish steel developed by National Steel, gives these buildings a beauty and attractiveness never before achieved in pre-engineered metal buildings.

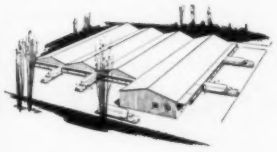
Stran-Satin beauty is more than skin deep. Spangle-free *Stran-Satin* provides a durable, non-corrosive, full commercial zinc coating, plus a new rib design that combines strength with advanced styling.

This exclusive exterior wall makes Stran-Steel's new clear-span Rigid Frame buildings the most attractive metal buildings available for manufacturing or processing, for warehousing or distribution, for service or repair shops. Five clear-span widths—40, 50, 60, 70 and 80 ft.—offer you unlimited flexibility for the size and shape building best suited to your needs.

With these good-looking Stran-Steel Rigid Frame buildings you get quality construction, fast erection, easy expansion. For more information call your local Stran-Steel Buildings dealer or send coupon.

Open Clear-Span Interiors for . . .

Manufacturing and Processing Plants

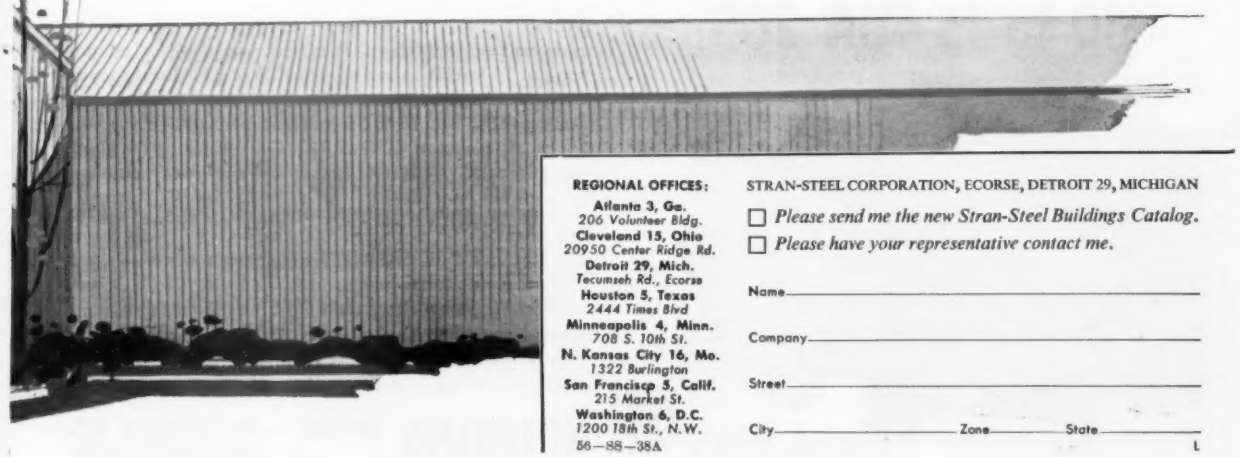


Warehousing and Distribution Centers

STRAN-STEEL CORPORATION

Ecorse, Detroit 29, Michigan • A Unit of

NATIONAL STEEL CORPORATION



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STRAN-STEEL CORPORATION, ECORSE, DETROIT 29, MICHIGAN

☐ *Please send me the new Stran-Steel Buildings Catalog.*

☐ *Please have your representative contact me.*

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Company_____

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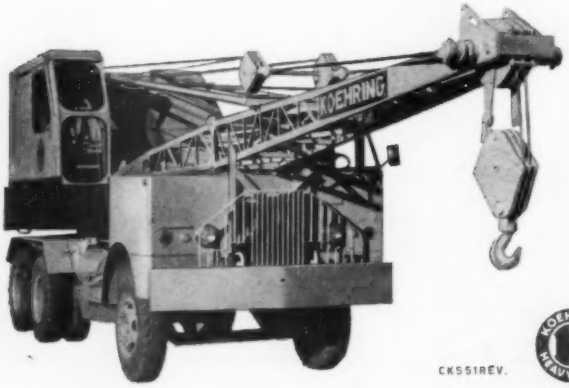
Check WORK CAPACITY of this

Koehring ½-Yard 10 to 15-TON 205



CK55IREV.

With its 10 tons of lift capacity on crawlers, Koehring 205 has plenty of power, strength and stability to handle ½ to ¾-yard dragline and clamshell buckets on a wide work radius. Boom lengths on the 205 crawler crane range from 30 to 55 feet.

Where rubber-tired mobility is needed, the 205 is available on truck mounting. This gives you the *plus* advantage of 15-ton lift capacity, and 32½ m.p.h. travel speeds for your dragline, clamshell and lift crane work. Truck-mounted 205 has 25 to 55-foot boom lengths (plus extra reach of maximum 30-foot jib.) On rubber or crawlers, the 205 readily converts to ½-yard shovel or hoe.

Before you invest in any excavator or crane, look into this Koehring 10-to 15-ton 205. You'll find it gives you a big *plus* in WORK CAPACITY over other machines in the ½-yard class. Meanwhile, read about its big 20" clutches, antifriction power-flow, automatic traction brakes, and other heavy-duty features in new 205 bulletin. Ask your Koehring distributor for a copy, or write to us.

KOEHRING HEAVY DUTY

KOEHRING COMPANY • MILWAUKEE 16, WIS.
Subsidiaries: JOHNSON • PARSONS • KWIK-MIX

Compact, low and narrow for city trenching

Take another look at the utility-size Trenchliner shown above. It's a new size, developed especially for city digging. Working height on this Parsons 155 is only 7 feet-4 inches. Width over crawlers is only 5 feet-4 inches for operating in narrow alleys and between buildings. Power-shift conveyor dodges trees, poles, and other side obstructions — places spoil bank on either side of trench.

For all its compactness and maneuverability, this 155 digs 16 to 26 inches wide, at depths to 8 feet. Digging speeds range from 5.8 inches up to 25 feet per minute. It "inches" its way past cross-pipes and other obstructions typical of city digging — steps up production on clear right-of-way.

Sloping ladder-boom has positive down-crowd — starts cut fast, holds accurate grade. It undercuts walks, curbs, gutters — makes vertical set-ins flush with walls, or existing mains. Heavy-duty 155 Trenchliner also has: cast-steel buckets, "Tap-In" teeth, spring-cushioned bucket-cleaner, tractor-type crawlers with 16-inch grouser treads, or 12-inch flat shoes.

Want more facts? Call Parsons distributor today. Also check Parsons larger ladder and wheel-type Trenchliners® on crawlers — and rubber-tired Trenchmobile®.

PARSONS COMPANY • NEWTON, IOWA
(Koehring Subsidiary)

11-S does on-the-spot mixing anywhere around town

Here's the 2-bag concrete mixer for scattered city jobs. Portable, smooth-trailing, this Kwik-Mix 11-S Dandie® is available as a 2-wheel mixer mounted on heavy coil springs . . . and on 4 wheels, with automotive type steering on front axle. Quickly moved around town, it speeds maintenance on streets, sidewalks, driveways, curb repairs. 11-S has wide, power-raised skip, selective skip shaker, double mixing action. You get consistent quality, batch after batch. Automatic water-measuring system gives fractional-pint accuracy. Batchmeter automatically controls mixing time. Tilted Flow-Line chute discharges full batch in 7 seconds. Tower attachment is available for overhead discharge. Other sizes, 3½ to 16-S. Also: 10, 14 cu. ft. bituminous mixers.

1-TON capacity MOTO-BUG®

To haul and pour concrete, or move any heavy loads on maintenance of streets, airports, parks, cemeteries, look into this low-cost Kwik-Mix R-15 Moto-Bug. It has 15 or 18 cu. ft. hopper, interchangeable 1-ton platform, and ¾-ton (7-foot) fork lift. There's a smaller-size Moto-Bug with multiple attachments also available. Send for bulletin.

KWIK-MIX COMPANY • PORT WASHINGTON, WIS.
(Koehring Subsidiary)

One section of W. 20th St. Built in 1922. Photos taken in 1923 and 1952.

Another section of W. 20th St. Built in 1923. Photos taken 1923, 1952.

Georgia St. Built in 1921. Photos taken in '23, '52.

9th St. Built in 1922. Photos taken in '23, '52.

Here today – *and still here tomorrow*

that's the story of Lorain, Ohio's

CONCRETE STREETS

Typical of Ohio's old concrete streets are these in Lorain on Lake Erie west of Cleveland. Many, like the examples illustrated here, have given outstanding service for more than 30 years.

Concrete streets like these serve so long and require so little maintenance that they deliver true ***low-annual-cost*** service. That's important to taxpayers, who foot the bills.

All over America there are concrete streets with similar service records. Yet today concrete streets can be built to render even better service as a result of improvements in design, materials and construction methods.

Concrete streets are safer, too. Wet or dry, their gritty, skid-resistant surface facilitates quick stops. Their light color affords maximum visibility at night. They are free from dangerous ruts and washboard ripples.

Free booklet, "*Concrete Pavement Manual*," will help you design and build concrete streets. Distributed only in the United States and Canada.

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

Dept. 7-4, 33 West Grand Ave., Chicago 10, Illinois

Southern Standard Building Code includes

BERMICO®

BITUMINIZED FIBRE PIPE

MUNICIPAL and other code authorities across the country have approved BERMICO Sewer Pipe. Now the Southern Building Code Congress of states from Virginia to Florida to Texas has added its stamp of approval for BERMICO in its Southern Standard Plumbing Code.

MODERN-MINDED code officials welcome the news . . . and are certifying this dependable, acid- and alkali-resistant bituminized fibre pipe. Made of tough cellulose fibres impregnated with coal-tar pitch, BERMICO is strong, root-proof, and gives lasting protection against pipe failure in sewer lines and drainage.

BERMICO comes in light-weight, 8-foot lengths for fast, easy installation. Only BERMICO has a complete line of bituminized fibre fittings, Wyes, Tees, Bends. You can't buy and install root-proof pipe for less.

Your community will thank you for modernizing your plumbing codes to include BERMICO . . . the Modern Pipe for Modern Living. For information, write Dept. *TB*-7, Brown Company, 150 Causeway Street, Boston 14, Mass.

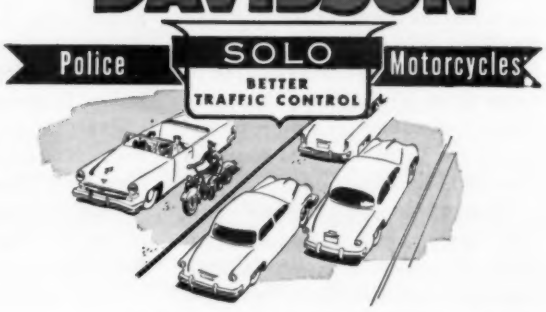
BROWN COMPANY

150 Causeway Street, Boston 14, Mass.
Mills: Berlin and Gorham, N. H.

Help vacationists arrive SAFE and SOUND with officers mounted on HARLEY-DAVIDSON

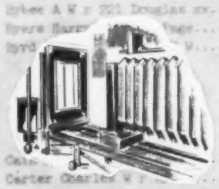
NOW that summer vacationists crowd the nation's streets and highways, traffic safety becomes a bigger problem than ever. That's why modern police departments rely on Harley-Davidson Motorcycles to help motorists arrive safe and sound. Motorists drive more carefully because they respect the authority of the mounted officer. The speed and maneuverability of the motorcycle enable the officer to handle every situation, even in peak traffic.

Get the facts about the New 1956 models from your Harley-Davidson dealer today. Or write Harley-Davidson Motor Company, Milwaukee 1, Wisconsin.



save time and money on price lists, parts lists, directories, catalogs, indexes, etc.

JUST TYPE



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Ask the man from Acme to show you examples

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☐ We are interested in Acme Visible equipment for _____ (KIND OF RECORD) records.

☐ Have representative call. Date _____ Time _____

Company _____ Attention _____

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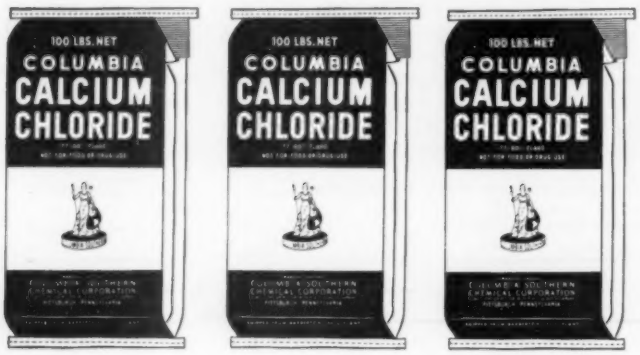
STOP DUST

on unpaved roads with COLUMBIA CALCIUM CHLORIDE

Before Columbia Calcium Chloride is applied, moisture should be present on the road surface. Application after a rain is ideal; otherwise the road should be wetted with a sprinkling truck.

Immediately after wetting, the road is treated with Columbia Calcium Chloride by means of a spreader that gives uniform distribution. Application should be about one pound of calcium chloride per square yard.



- Slash summer maintenance costs
- Provide smooth, durable surfaces
- Conserve on aggregate losses
- Make surroundings more healthful
- Prevent crop damage due to dust

Dusty roads are enemies to your budget, to your maintenance crews, and to your community good will. Columbia Calcium Chloride stops dust before it forms, saves you time, grief and money.

Columbia Calcium Chloride preserves the natural road moisture, keeps surfaces firm, compact and smooth. Applications can be made quickly, easily and economically. Roads give excellent year 'round performance with a minimum of attention.

Try Columbia Calcium Chloride now and see what it will do for you. Prompt delivery. Ask for your free 28 page booklet on "The Calcium Chloride Road."

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY

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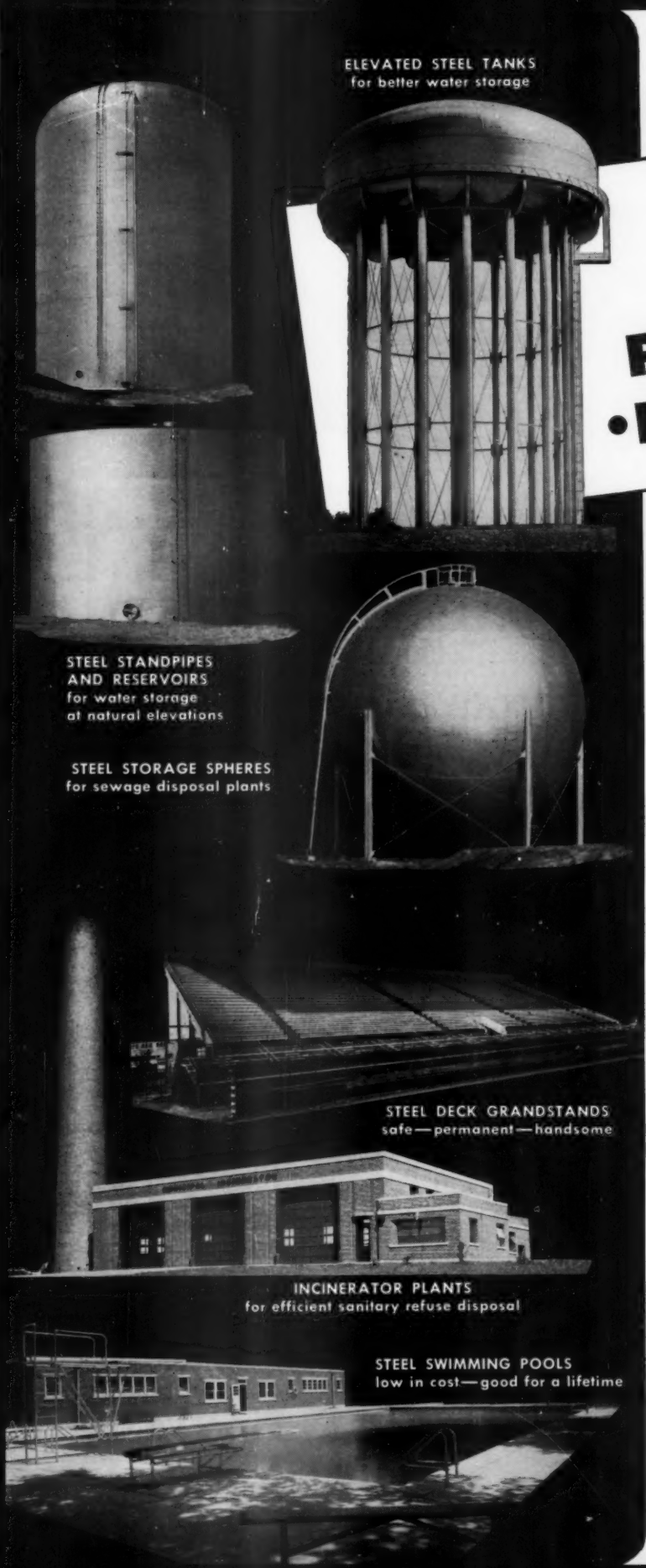

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PITTSBURGH •DES MOINES

SERVES WITH STEEL

the American Municipality

The strength, permanence and economy of steel join with wide experience, fine craftsmanship and complete responsibility in Pittsburgh-Des Moines' construction for the modern community. Dependable, low-cost water storage . . . efficient refuse disposal . . . better facilities for recreation . . . permanent, economical mass outdoor seating . . . these are P-DM specialties providing maximum value for every invested dollar. • Write for descriptive brochures on the products in which you are interested, and let us consult on your needs.

AISC

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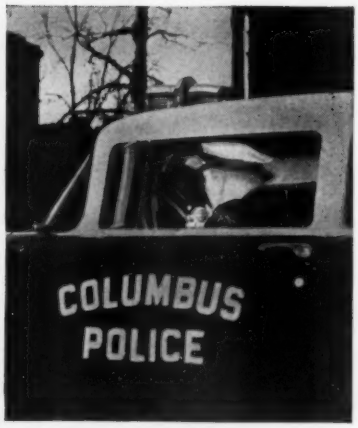
LOS ANGELES (48) . . . . . 6399 Wilshire Blvd.
DES MOINES (8) . . . . . 913 Tuttle Street
DALLAS (1) . . . . . 1217 Praetorian Building
SEATTLE . . . . . 520 Lane Street
SANTA CLARA, CAL. . . . . 619 Alviso Road
MADRID, SPAIN . . . . . Diego DeLeon, 60



New G-E Progress Line Radios Are Now Serving With Ohio's Capital City Force

COLUMBUS, OHIO POLICE SELECT NEW GENERAL ELECTRIC TWO-WAY RADIOS

The Division of Fire and Police Communications, City of Columbus, Ohio, is nerve center of a radio network linking more than three hundred vehicles. A combination of 250-watt and 60-watt base station transmitters, spotted conveniently throughout the city, speed signals to this fleet on a 24-hour basis.

Progress Line Dependability

Progress Line two-way radios are going on duty with cities all over America. General Electric Plug-in-Chassis design means faster servicing, interchangeable chassis permits switching of equipment between vehicles—even between 6 and 12-volt d.c. systems. Simultaneous monitoring of 2 channels from one radio and Tone Signal Calling are other Progress Line advantages.

2-WAY MOBILE RADIO
FREQUENCY STABILITY & SELECTIVITY guaranteed for life!

Investigate The New G-E Progress Line

Your G-E Communications Counselor can show you the advantages you get when you "go G.E." Call him in, or write to: *General Electric Company, Communication Equipment, Section X1076, Electronics Park, Syracuse, N.Y.*

Progress Is Our Most Important Product

GENERAL ELECTRIC

New York State Engineers build road in spite of slashed budget. Bitumuls with local aggregate is selected.

WHEN a drastic cut in appropriations forced the New York State Department of Public Works to reduce a project to a minimum expenditure, they turned to the proved method of Bitumuls-Native Aggregate construction. Based on the experience of several of the counties in the region, they knew this to be a sound method of stretching road-building dollars.

Rotary mixer and Bitumuls tank truck work in tandem to stabilize 4" lift of base aggregate.

The original plan

Airport construction at Riverhead, Long Island forced the relocation of the Wading River-Manor Road. As engineered by the State Department of Public Works, plans for this road originally called for two 24 ft. lanes for a length of approximately 6 miles. Financing, through the U.S. Bureau of Public Roads, struck a snag; and drastic economies were required to keep the job alive. In adjusting to the lower appropriation, it was decided to reduce the project to one 24 ft. lane, of a length allowable under the available monies.

New estimates indicated this would amount to approximately 3.16 miles, and invitations based on this distance were put out for bids. These specifications called for an 8 inch stabilized base, with 1" Asphaltic Concrete surfacing.

Job data

Local selected soil, sand, and gravel blended to meet the following dry sieve specifications were used for the stabilized base work on this job.

PERCENT BY WEIGHT PASSING		
Sieve	Specification	Aggregate Used
1 ½" Sieve	100	100
1" Sieve	90-100	84.5
¾" Sieve	60-80	78.3
¼" Sieve	30-50	64.2
#10 Mesh	20-40	50.5
#40 Mesh	10-30	10.9
#80 Mesh	7-8	5.6
#200 Mesh	5-15	3.8
Emulsified Asphalt	5-7%	5.75%

The amount passing the 200 mesh was specified to be not more than one-half the amount passing the 40 mesh sieve.

Aggregate was blended at the pit, approximately five miles from the job site, tested, then trucked to, and spread on, the sub-base. Enough such material for the bottom four inches of the base course was brought in and spread. Bitumuls Emulsified Asphalt, mixing grade, was pumped directly from the transport truck into a Rotary type mixer. This first 4" base course was mixed, rolled, and cured. Aggregate was then brought in for the second 4" course and the process repeated.

Heavy rains encountered

During the construction of the base course, two separate hurricanes interrupted job-progress. Delay was held to a minimum because Bitumuls readily coats damp aggregate, and damage caused by the storm was restricted to exposed areas of the sub-base plus those areas of the stabilized base that were not cured.

Surface course construction

The 8" Bitumuls Stabilized Base was topped with 1" fine aggregate Asphaltic Concrete surface course. Spreading and compaction of this material was accomplished by conventional methods. The surface course was extended 1 ft. on either side of the 24 ft. pavement to provide a degree of shoulder stability. Upon final acceptance, the road was turned over to the town of Riverhead, New York, by the contractor.

Sound paving, with economy... Bitumuls Emulsified Asphalt used with local aggregate

ROAD-BUILDERS throughout the nation have come to recognize the value of Bitumuls® Emulsified Asphalt in holding the cost of road construction to the lowest possible level.

A major factor in this economy: *Bitumuls' compatibility with local or in-place aggregates, even though they be hydrophilic.* This eliminates costly transportation of imported materials.

Our Engineers, operating out of our nationwide network of offices, will gladly provide complete information on specific grades of Bitumuls for various types of pavement construction.

Bitumuls is used extensively for maintenance work, too. *Call our nearest office for complete details.*

ABA

American Bitumuls & Asphalt Company

200 Bush Street, San Francisco 20, Calif.

St. Louis 17, Mo. — Cincinnati 38, Ohio
Tucson, Ariz. — Inglewood, Calif.
Perth Amboy, N. J. — Baltimore 3, Md.
Mobile, Ala. — San Juan 23, P. R.
Oakland 1, Calif. — Portland 7, Ore.

LEADING MARKETERS OF ASPHALTS, CUTBACKS AND BITUMULS—NATIONWIDE

Today's water Supply-

is your community's most valuable asset!

Badger Meters provide a precise check on usage and waste . . . first logical step towards conservation.

This perplexed citizen is a victim of water shortage — fast becoming a major problem in many communities. The tools he holds in his hands hardly equip him to fight for his rightful share — *he needs help from his water department.*

What YOU do *now* to safeguard *present water* supplies — to prevent situations like this —may play an important part in future development of your own community.

Metering all water for residential and industrial use is the first logical step towards knowing *where* and *how much* water is used — or wasted. Studies prove that water use in metered cities is reduced by as much as 33%.

Metering your water supply is a step made easy by the Badger Meter representative in your area. He can furnish complete data on many types of Badger Meters best suited for the specific needs of your community. For an appointment, at your convenience, write direct.

Fair rates for all users - greater income per year

One of the greatest "business machines" works for you — accurately and sensitively registering all flow. Large and small users alike pay fair shares to help keep water departments self-supporting.

Durability, dependability and low maintenance costs make community ownership of Badger Meters an investment in economy that pays dividends over the years.

Badger Water Meters

Water is Vital

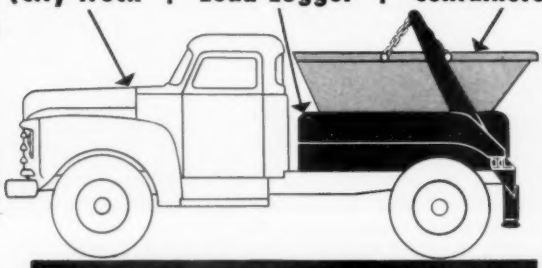
BADGER METER MFG. CO. • MILWAUKEE 45, WISCONSIN

"Badger Meters have conserved it for 50 years"

YOUR CITY CAN SAVE!

The LOAD LUGGER® System

(City truck + Load Lugger + Containers)



HOIST IT... HAUL IT... DUMP IT

Street repairs, park maintenance, rubbish handling and similar municipal jobs get done faster with less manpower and equipment. A Load Lugger equipped truck does the work of several ordinary dump or flat-bed trucks.

Container-loads of materials are spotted readily accessible to the work crews. Meanwhile, the Load Lugger picks up containers full of broken concrete, bricks, asphalt, etc. and hauls them away. Truck waiting time is eliminated. Work crews aren't kept waiting. Efficiency goes *up*—costs go down. For example, a large Ohio city saves more than 1,100 man-hours per week and thousands of dollars annually, thanks to The Load Lugger System.

If your city is like most, costs are skyrocketing in the face of declining revenue. So, take the first step toward making your budget stretch farther—investigate The Load Lugger System for *your* city. Check the Yellow Pages of your 'phone directory for the name of your Load Lugger dealer.

Load Lugger places loaded containers on its truck bed, dumps them or sets empty containers on the ground, automatically—in seconds.

Load Lugger with closed container designed for hauling garbage and rubbish.

Load Lugger can be used as a flat-bed truck, too, to haul equipment, pipe and similiar long, bulky or heavy pieces. Load Lugger versatility is a "plus value".

LOAD LUGGER®
A BORG-WARNER TRADE MARK

Ingersoll KALAMAZOO DIV.
BORG-WARNER CORPORATION
1877 North Pitcher Street, Kalamazoo, Michigan
Telephone 5-3501

Installing 36-in. tar-enameled steel pipe in a wooded area northwest of Worcester.

20,000-ft steel main installed in Worcester

One of the biggest water-supply projects to be completed in New England in 1955 was the Worcester, Mass., high-pressure line. The design working pressures are 160 psi for the 36-in. ID section and 190 psi for the 30-in. ID section.

The steel main extends somewhat over 20,000 ft from the pumping station at Holden Reservoir No. 2 to a point near Indian Lake, where it connects with Indian Hill Reservoir. Its high capacity and great reserve strength make the line an important source of water for the present and future needs of industrial Worcester.

Photographed on the job are (left to right) Fred Dodge, inspector for Metcalf & Eddy, Boston, design engineers for the project; Cliff Johnson, president of Johnson Brothers, general contractor; Joseph Flatley, inspector for Metcalf & Eddy; C. B. Hardy, Water Superintendent for the City of Worcester; Ernest Johnson, partner in Johnson Brothers.

The line is 36 in. ID for some 14,300 ft from the pumping station to Grove Street, where it is reduced to 30 in. ID. Bethlehem supplied the pipe in easy-to-install 40-ft lengths, coated and lined with coal-tar enamel, and protected with felt and paper wrappings. Every length was hydrostatically tested in our shop in accordance with AWWA specifications. Field joints were made with Dresser couplings.

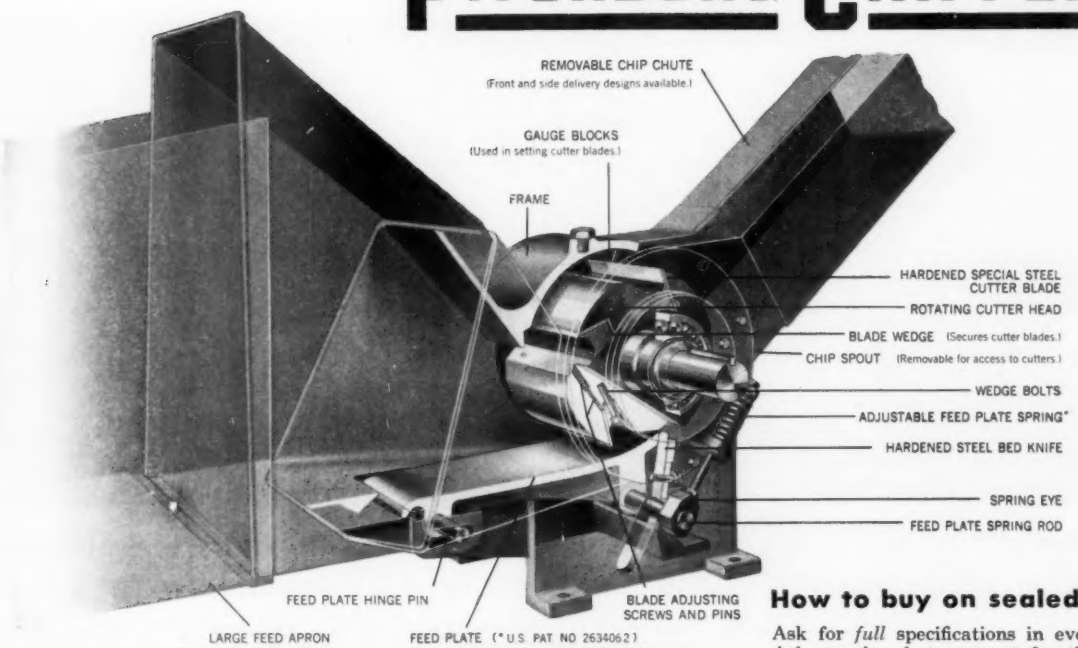
If you have a new large-diameter line in mind, we urge you to consider the many advantages of welded steel pipe. No other material can match steel pipe for strength, long life, resistance to damage, leak-proof joints and ease of installation. May we give you more information? Please contact the Bethlehem sales office nearest you.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM STEEL

Here's the inside story of time-saving, labor-saving FITCHBURG CHIPPERS


REMOVABLE CHIP CHUTE
(Front and side delivery designs available.)
GAUGE BLOCKS
(Used in setting cutter blades.)
FRAME
HARDENED SPECIAL STEEL CUTTER BLADE
ROTATING CUTTER HEAD
BLADE WEDGE (Secures cutter blades.)
CHIP SPOUT (Removable for access to cutters.)
WEDGE BOLTS
ADJUSTABLE FEED PLATE SPRING*
HARDENED STEEL BED KNIFE
SPRING EYE
FEED PLATE SPRING ROD
FEED PLATE HINGE PIN
BLADE ADJUSTING SCREWS AND PINS
LARGE FEED APRON
(Protects operator from cutters. Folds up when not in use.)
FEED PLATE (*U.S. PAT. NO 2634062)
(Spring operated feed plate automatically adjusts for different sized material and reduces horsepower requirements.)

GET FULL SPECIFICATIONS—*Know what you buy*

SPECIFICATIONS: FITCHBURG CHIPPER *(unit guaranteed for workmanship and material for one year.)*

CHIPPING UNIT MODEL (Trailer Type)	TWC-6	TWC-612	TWC-9	TWC-915
Diameter of cutter head	9½"	9½"	11½"	11½"
Length of cutter head body	6"	12"	9"	15"
Number and length of cutter blades	4—6⅛"	4—12⅜"	4—9"	4—15"
Type of blade	Special High-Chrome, High-Carbon Tempered Steel			
Cutter head shaft size, (diameter)	1¾"	1¾"	2½"	2½"
Shaft keyway size	⅜" x 3/16"	⅜" x 3/16"	⅝" x 5/16"	⅝" x 5/16"
Approximate weight of chipper only	415#	650#	630#	1,000#
Maximum knife setting	¼"	¼"	⅜"	⅜"
Capacity—maximum size round (limbs, etc.)	4½"	4½"	7"	7"
maximum size width (slabs, etc.)	6"	12"	8½"	14½"

All units equipped with exclusive *Fitchburg Safety Spring-activated* feed plates (U.S. Patent No. 2634062)

POWER UNIT — Gasoline fuel.				
Number of cylinders	4	6	6	6
Cu. In. Piston Displacement	162	226	226	251, 330, or 427
Water Cooled	Yes	Yes	Yes	Yes
Electric starter and generator	Yes	Yes	Yes	Yes
Clutch Power Take-Off	Disc Clutch	Disc Clutch	Disc Clutch	Disc Clutch
Battery	6-volt	6-volt	6-volt	6-volt
Governor	Var. speed	Var. speed	Var. speed	Var. speed
Oil level and pressure gauge	Yes	Yes	Yes	Yes
Water temperature gauge	Yes	Yes	Yes	Yes
Ammeter	Yes	Yes	Yes	Yes
Key ignition switch	Yes	Yes	Yes	Yes

Power Units are the enclosed type, with industrial engines of proper horsepower and torque ratings.

TRAILER UNIT. All welded steel construction. Steel I-Beam axle. Steel hubs with roller bearings. Drop forged ring-type tow bar to fit Army-type pintle hook. Safety chains. Front and rear legs, front retractable jack-type with steel caster, rear adjustable for height. Automotive drop-center type wheels, 6-ply Commercial pneumatic tires, ranging from 6.00 x 16 to 7.50 x 16 6-leaf springs of 3,500# capacity. Trailer equipped with combination tail light and number plate bracket, with tail light operated by toggle-switch on motor panel (stop light furnished when required). Tire tread widths range from 63" on TWC-6 to 72½" on TWC-915. Fenders and tool boxes are standard equipment. **EQUIPMENT.** Proper sheaves and high-capacity v-belts. Feed apron, chip spout, side delivery chute, 2-piece truck loading chute with chip deflector. Belt guard. Extra set of cutter blades with each unit. Tools furnished consist of necessary Allen wrenches, handle, 1 gauges, honing stone, can of grease, grease gun adapter. Operating and parts manuals. Fitchburg Chippers supplied with standard gray paint unless otherwise requested.

Specifications subject to change without notice

Some of the many uses for your Fitchburg Chipper: **STORM DAMAGE • PARKS • ROADSIDE CLEARANCE • CHRISTMAS TREE DISPOSAL • DUTCH ELM DISPOSAL • SHADE TREES TRIMMINGS • HIGHWAY CONSTRUCTION**

FITCHBURG ENGINEERING CORPORATION
FITCHBURG, MASSACHUSETTS

How to buy on sealed bids

Ask for *full* specifications in every bid. Ask *exactly* what you get for the price quoted. Be sure you do not buy a stripped-down machine with extras to come. (Every Fitchburg Chipper is a complete machine, ready to operate.)

Compare the specifications on this page. See why so many cities, towns, commissions, power companies, treemen, and contractors buy Fitchburg Chippers—the only chipper with a written ONE YEAR GUARANTEE, the only machine with the patented spring-activated feed plate. (This feature provides equally smooth chipping of *all* wood sizes to machine's rated capacity.) Another exclusive feature is the hinged feed apron which can be closed when chipper is not in operation.

Fitchburg Chippers have no heavy fly wheels with their warm up period and resulting disadvantages in start-stop operation. Consequently, there is no danger of clutch strain or frequent bearing failure. Fitchburg Chippers are also known for their relative quietness—an important feature when operating on city streets.

COUPON BRINGS FREE DATA

Get the facts—get them now. There is no obligation, mail this coupon today.

FITCHBURG ENGINEERING CORPORATION
Fitchburg, Massachusetts, Dept. AC-76

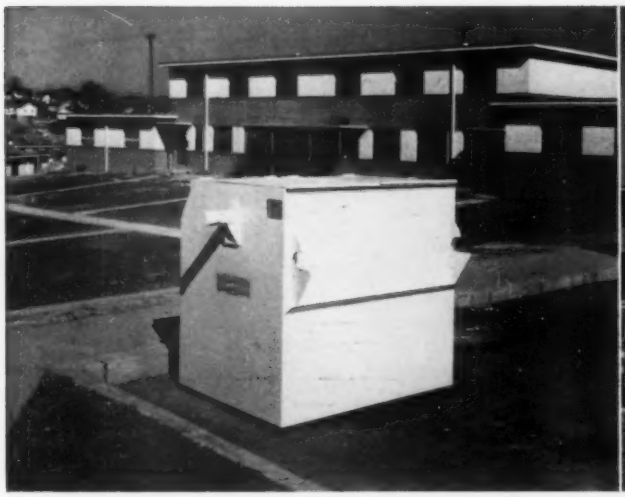
Send FREE Fitchburg Chipper Data.

(NAME) (POSITION)

(ADDRESS)

(TOWN OR CITY) (STATE)

NEW DEMPSTER-DUMPMASTER Front-end Refuse



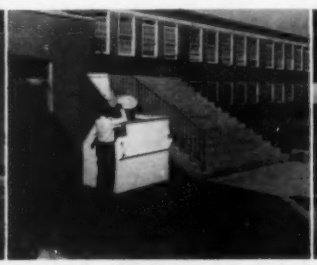
Revolutionary equipment serves scores of containers—picking each up hydraulically and emptying into compaction type body!

The Dempster-Dumpmaster's flexibility includes safe front-end-collection of refuse from conventional cans in alley pick up. Men are always in safe area in full sight of driver.

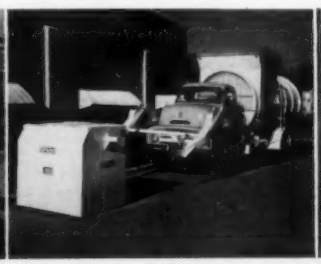
WITH THIS NEW Dempster-Dumpmaster for handling refuse in 1¼, 2 and 3 cu. yd. containers and the Dempster-Dumpster for handling bulk refuse in 6 to 15 cu. yd. containers, refuse collection is now a near-science! Necessity of operating several conventional trucks with crews is eliminated. Unsanitary, fire-hazardous and inadequate conventional trash cans, barrels, etc. can be removed from your business districts, housing and apartment areas, schools, hospitals, etc.

Where containers of limited capacity are preferred, the Dempster-Dumpmaster is the solution to the costly and unsanitary methods of collection because of a multitude of reasons, including: Detachable Containers always remain at accumulation point. They may be placed in or outside buildings. Only one man, the driver, is required for complete operation. It hydraulically picks up each container and dumps refuse into compaction type body for maximum loads. No equipment approaches its flexibility for general service, including safe alley pick up of refuse from conventional cans with only a 24-inch height for dumping cans, and with men always in full view of driver you have safe front-end-collection at all times. Too, it's faster because refuse is compacted while container is being loaded. By promising such extraordinary economies and meticulous sanitation, the Dempster-Dumpmaster merits thorough investigation by any city or town, regardless of size. Ask us to send you complete information. Dempster Brothers, Inc.

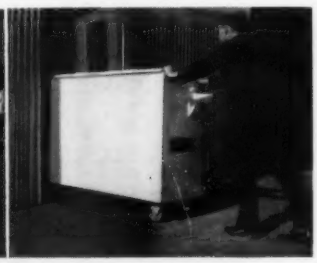
Filling Stations are one of many types of service establishments that need fire-proof Dempster-Dumpmaster Containers.



Schools, Hospitals are among the institutions that use these containers; benefiting by the sanitation and low cost.

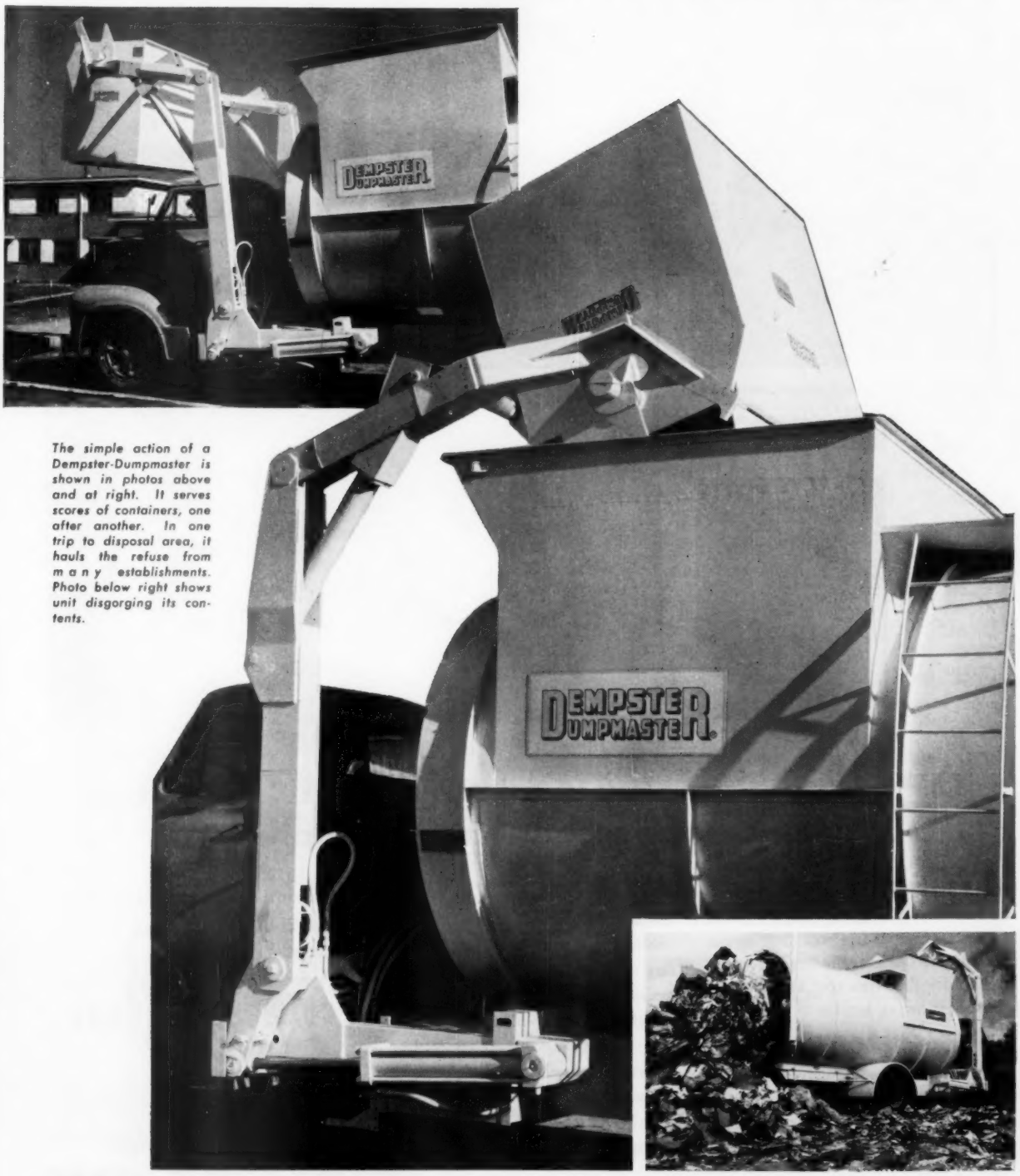


Restaurants are just one type of many business establishments in your city desiring these scavenger-proof, rat-proof containers.



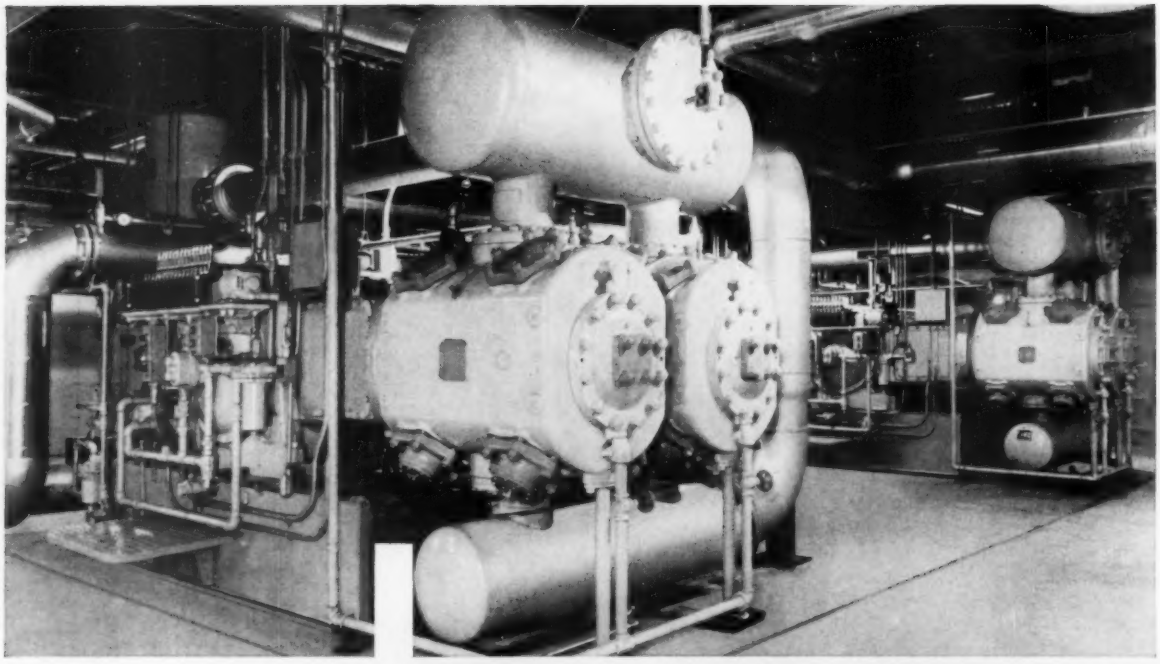
Casters are available on Containers when needed for location at convenient refuse accumulation areas outside or inside buildings.

gives you Safe, Sanitary Collection at a New Low Cost!

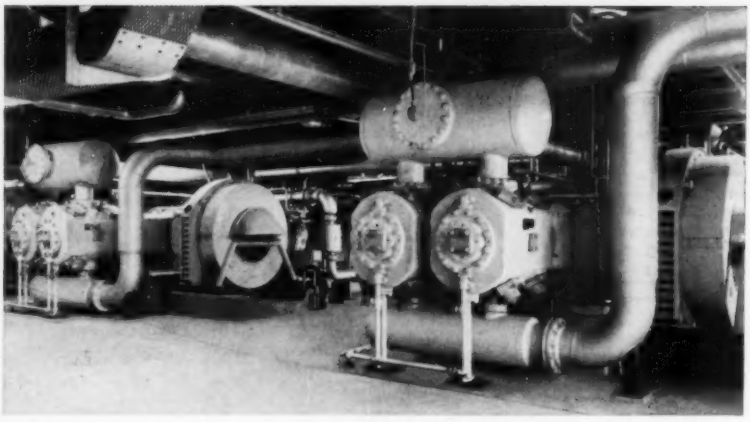


The simple action of a Dempster-Dumpmaster is shown in photos above and at right. It serves scores of containers, one after another. In one trip to disposal area, it hauls the refuse from many establishments. Photo below right shows unit disgorging its contents.

DEMPSTER BROTHERS, 876 DEMPSTER BUILDING, KNOXVILLE 17, TENNESSEE



Four-cylinder Cooper-Bessemers, each rated 500 hp at 400 rpm . . . dependable source of compressed air to "blow down" boiler and lines in the El Segundo, California, steam station.



Another Example of Efficient Power at Lower Cost

COOPER BESSEMER EST. 1833

UP goes economy in a "blow down" operation ....with Cooper-Bessemer compressors

• In the El Segundo steam station of the Southern California Edison Company . . . Cooper-Bessemer 500 hp air compressors deliver the flexibility and reliability that cuts cost and trouble in soot blowing service.

Compressing air from atmosphere to 500 psig, these motor-driven Cooper-Bessemers are actuated automatically with continued "on-off" operation upon pressure demand.

The Cooper-Bessemer compactness feature makes these units ideal for limited space installation. Without any sacrifice of accessibility or ruggedness, you save on space, housing, installation and piping costs.

If *your* future plans include compressor service up to 6000 hp, make sure you check first with Cooper-Bessemer. Write today for additional information, outlining your particular requirements.

MOUNT VERNON, OHIO
COOPER-BESSEMER
GROVE CITY, PENNA.

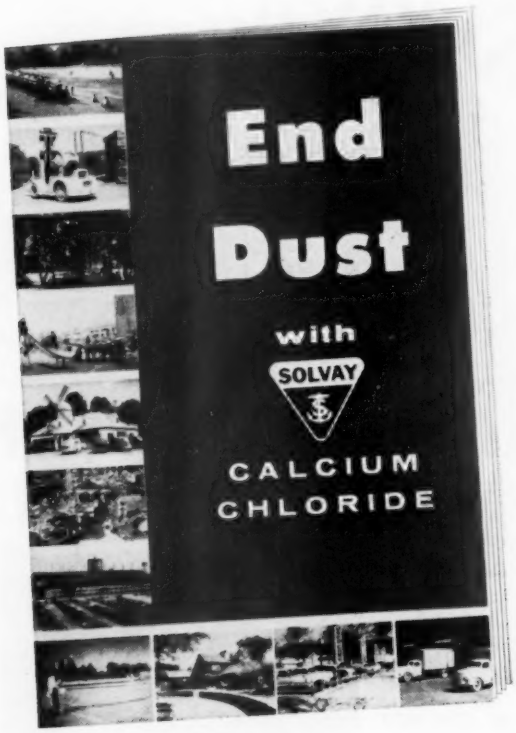
New York City • Seattle, Wash. • Chicago, Ill. • Houston, Dallas, Greggton, Pampa and Odessa, Texas • Washington, D. C. Shreveport, La. • San Francisco, Los Angeles, Calif. • St. Louis, Mo. • Gloucester, Mass. • New Orleans, La. • Tulsa, Okla. Caracas, Venezuela • COOPER-BESSEMER OF CANADA, LTD., Edmonton and Calgary, Alberta, Canada.

DIESELS • GAS ENGINES • GAS-DIESELS • ENGINE-DRIVEN AND MOTOR-DRIVEN COMPRESSORS

This Book Tells How

SOLVAY CALCIUM CHLORIDE

Can Help You End Dust Problems On Any Unpaved Surface



Whatever your dust problem, let Solvay Calcium Chloride do for you what it's doing for thousands of others—

END DUST ON ALL UNPAVED SURFACES—
Unpaved Streets • Parking Areas • Driveways • Playgrounds • Tennis Courts • Parks • Car Lots • Camps • Motels • Cemeteries • Filling Stations • Trailer Camps • Outdoor Movies

Solvay Calcium Chloride is clean, odorless, colorless, economical and easy to apply. No special experience called for, no expensive equipment required. The book "END DUST" shows with photos, sketches, and charts what Solvay Calcium Chloride can do to end *your* particular dust problem. Get your copy—fill in the coupon and mail today.

SOLVAY

SPECIAL — TO DEALERS

Want to handle profitable Solvay Calcium Chloride year-round? Write for the complete story—price to you, sales aids, the advertising support and the other benefits you get.

Allied Chemical

SOLVAY PROCESS DIVISION
ALLIED CHEMICAL & DYE CORPORATION
61 Broadway, New York 6, N. Y.

Please send me at no obligation your Free Book, "END DUST".

Name .....

Company .....

Position .....

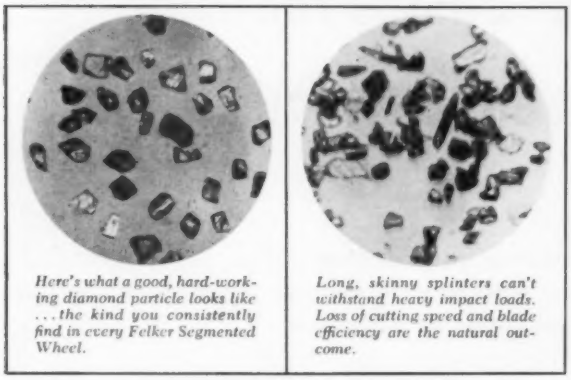
Address .....

City ..... Zone .... State .....

61-7

CHUNKY DIAMOND PARTICLES

Important to Diamond Blade Life



Here's what a good, hard-working diamond particle looks like . . . the kind you consistently find in every Felker Segmented Wheel.

Long, skinny splinters can't withstand heavy impact loads. Loss of cutting speed and blade efficiency are the natural outcome.

Another reason for Felker Segmented Blade leadership in concrete cutting

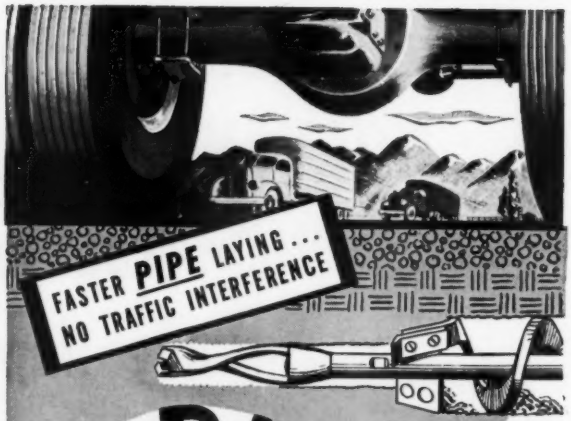
At Felker Manufacturing Company we go to a lot of effort to make the best diamond wheels you can buy. A most important step in blade manufacture is reduction of the diamonds to correct particle size. Simply shattering the diamonds isn't enough . . . this produces a variety of particle shapes which is disadvantageous. *Longest life and most work result when the tiny diamonds are compact in shape, of nearly uniform length, breadth and thickness.* This structure increases strength, resists fracturing and minimizes loss of diamonds when wheel is in use. These particular diamond shapes also possess a myriad of sharp cutting edges which increase cutting speed of the blade.

By developing special crushing and separating techniques at Felker Manufacturing Company, the weaker diamond splinters, flakes and useless "fines" are eliminated. Only carefully graded, properly shaped diamond particles ever go into Felker Segmented Blades—*another insurance of top quality performance on every concrete cutting job!*

FELKER DI-MET SINCE 1924

FELKER MANUFACTURING CO.
TORRANCE, CALIFORNIA

World's largest and oldest manufacturer of diamond abrasive cut-off wheels and machines.



HYDRAUGER*

REG. U. S. PAT. OFF.

Get Booklet . . . shows the incredible savings Hydrauger makes in both time and cost.

BORES	2" through 24"
DISTANCE	up to 225 feet or more, per setting, depending on earth formation being bored.

HYDRAUGER CORP. Ltd.
681 Market Street
San Francisco, California

**Earth Boring Tool*

HY-258

Baseball bats don't pour out of a hose

●

But they're lifted out by a Hayward bucket, as are also sticks and stones. Thirty basins a day is a good average day's work.

●

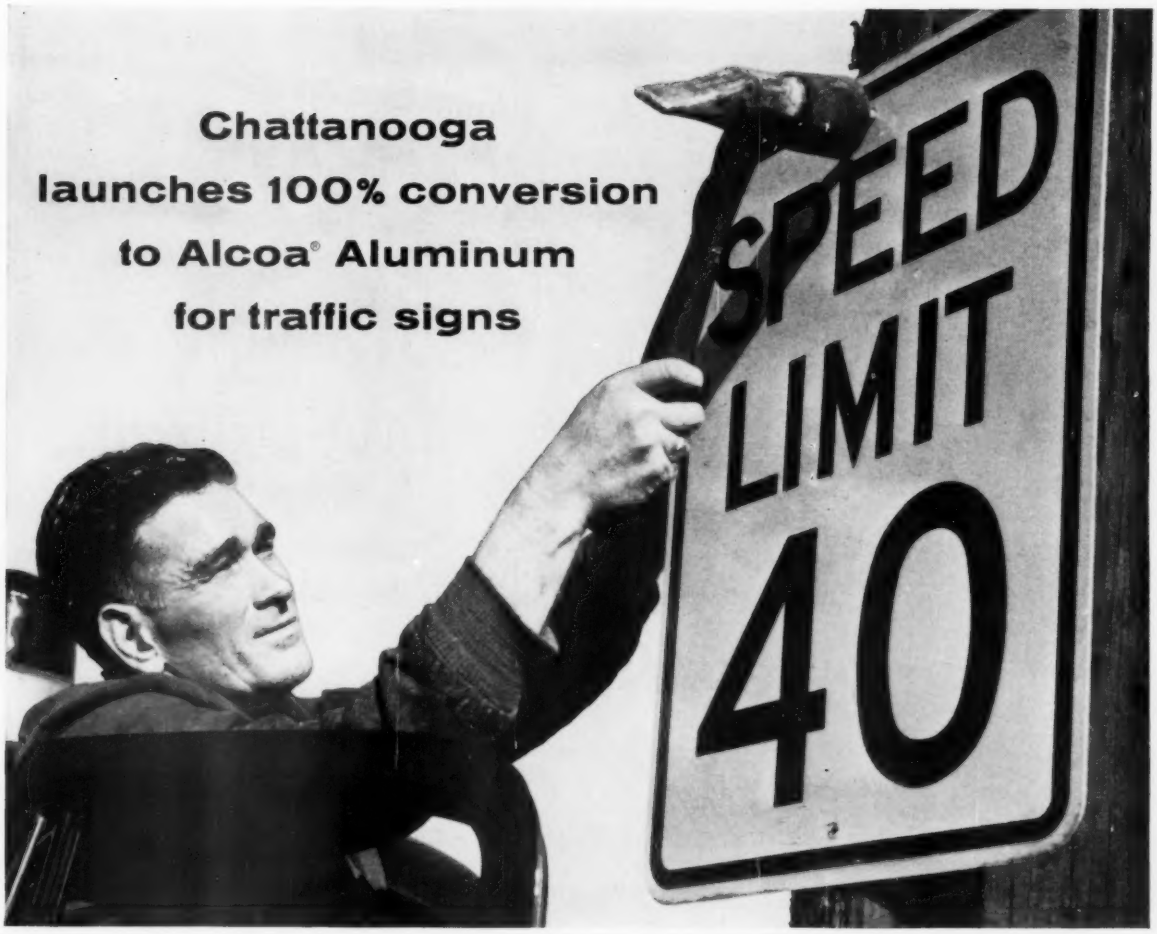
Hundreds of cities are doing it with Haywards.

Write for Bulletin

THE HAYWARD COMPANY

50 Church Street, New York 7, N. Y.

Chattanooga launches 100% conversion to Alcoa® Aluminum for traffic signs



"It's Lighter, Stronger and Ends Rust,"

Reports Traffic Engineer Marble J. Hensley

Signs are vital to traffic control in the valley city of Chattanooga, where access is limited to one bridge, four tunnels and a mountain highway and main arteries carry from 25,000 to 38,000 cars per day. That's why the efficiency-minded traffic engineer, Marble J. Hensley, is scheduling 100% replacement of steel and wood signs with Alcoa Aluminum.

"I knew from past experience," declares Hensley, "that aluminum needs no painting, offers greater resistance to bending by vandals or collision and to corrosion by weather and industrial fumes. Its light weight saves money, too, because signs must be handled many times during fabrication and erection. We installed 1,206 signs of Alcoa Aluminum last year and all signs will be aluminum when our five-year program is finished."

Thirteen leading sign manufacturers can help you enjoy the same benefits gained in Chattanooga by supplying finished signs of Alcoa Aluminum, all ready to erect. Contact the one nearest you, or write: ALUMINUM COMPANY OF AMERICA, 1680-G Alcoa Building, Pittsburgh 19, Pa.

Fasten Aluminum with Alcoa Aluminum Fasteners

THE ALCOA HOUR Television's Finest
Live Drama — Alternate Sunday Evenings

These manufacturers sell finished signs of Alcoa Aluminum

AGA Division
Elastic Stop Nut Corporation of America
1030 Newark Avenue
Elizabeth, New Jersey

California Metal Enameling Co.
6904 East Slauson Avenue
Los Angeles 22, California

Cataphote Corporation
2505 Albion Street
Toledo, Ohio

Gopher Stamp & Die Co.
78 Chicago Avenue, E.
St. Paul, Minnesota

The Grote Manufacturing Co., Inc.
500 Lafayette Avenue
Bellevue, Kentucky

The Hunt Company
18308 James Couzens Hwy.
Detroit 35, Michigan

Lyle Signs, Inc.
2720 University Ave., S.E.
Minneapolis 14, Minnesota

Minnesota Mining & Manufacturing Co.
900 Fauquier Avenue
St. Paul, Minnesota

Mulholland-Harper Co.
5820 Tacony St.
Philadelphia, Pa.

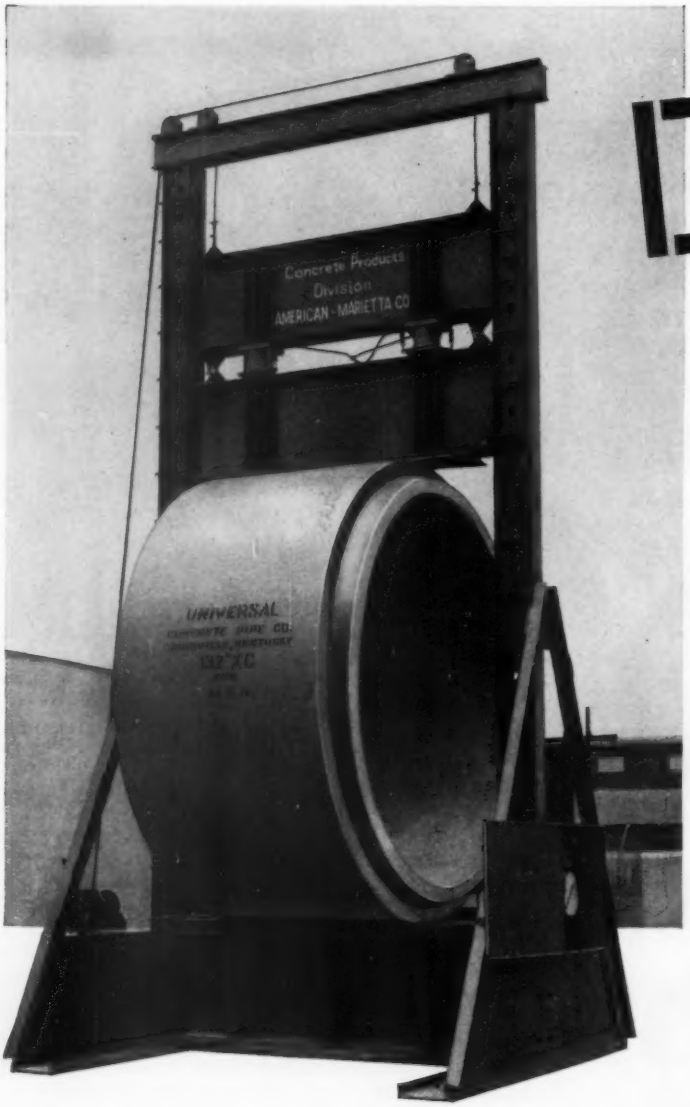
National Safety Engineers, Inc.
3910 First Ave., South
Birmingham, Alabama

Standard Sign & Signal Co.
470 Main Street
Clinton, Massachusetts

Traffic & Street Sign Company
80 Foundry Street
Newark, New Jersey

Zumar Industries
1608 Essex Street
Los Angeles 28, California

Your Guide to the Best in Aluminum Value



Pipe section under test is 132″ in diameter, six feet long, with a 12″ wall thickness. Test requirements called for a .01″ crack of 132,000 lbs. with an ultimate load of 198,000 lbs. Test results were 164,000 lbs. for the .01″ crack and in excess of 200,000 lbs. for the ultimate load.

PROOF!

through pre-testing...

Large diameter pipe and high strength can go together!

Stop the guesswork... install American-Marietta Company concrete pipe of pre-tested strength. To prove the strength of large diameter A-M pipe, we will gladly test pilot sections under your supervision on our special machines.

Another plus—precasting under factory control means an accurate proportioning of quality materials—with a strict adherence to design specifications—remote from the hazards of trench construction.

American-Marietta Engineers will aid in the design of precast concrete pipe sections to meet special requirements in sizes from four inches through 144 inches in diameter—then pre-test the section to guarantee the strength of the design.

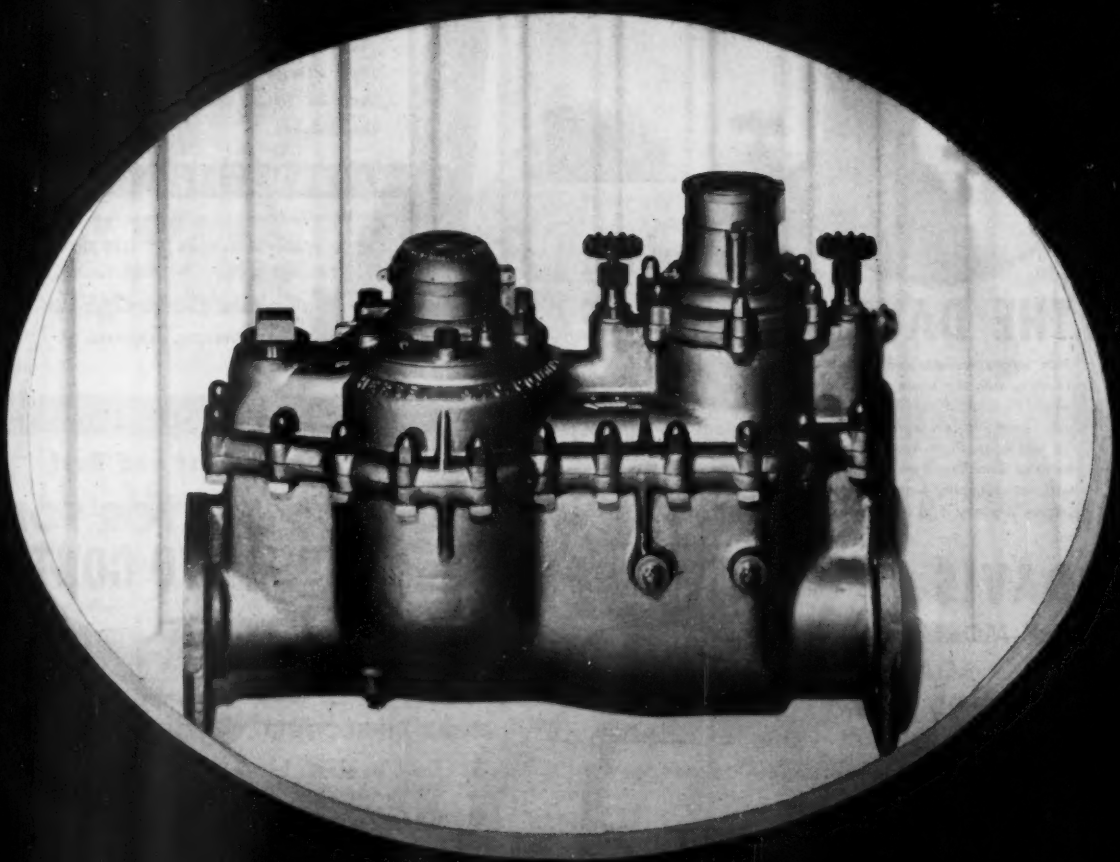
Our technical staff will be pleased to assist you with any of your pipe problems

AMERICAN-MARIETTA COMPANY
CONCRETE PRODUCTS DIVISION
GENERAL OFFICES:
AMERICAN-MARIETTA BUILDING,
101 EAST ONTARIO STREET, CHICAGO 11, ILLINOIS PHONE: WHITEHALL 4-5600

DIVISIONS AND SUBSIDIARIES

B. C. Concrete Company, Ltd.
Concrete Conduit Company
Concrete Products Co. of America
Lamar Pipe and Tile Company
Lewistown Pipe Company
Universal Concrete Pipe Co.
Tellyer Concrete Pipe Co.
American-Marietta Company of Pennsylvania

HERSEY



HERSEY COMPOUND METERS

ALL BRONZE CASE 2" TO 6" INCLUSIVE

69 years of successful experience and engineering skill is back of every water meter made by the

HERSEY MANUFACTURING COMPANY

SOUTH BOSTON, MASS.

BRANCH OFFICES: NEW YORK — PORTLAND, ORE. — PHILADELPHIA — ATLANTA — DALLAS — CHICAGO
SAN FRANCISCO — LOS ANGELES

You'll never get tired

of Working

THE DAVIS BACK-HOE

This large, well-padded seat is designed for your comfort. It revolves with the boom so you always face the direction of your work. Control of the entire back-hoe is at your finger-tips, and you sit so you can see exactly where you're digging . . . even at 13 feet deep. Right angle operation, extra stability, quick attachment or detachment make it the most versatile back-hoe available with many quality features . . . and modern manufacturing techniques produce it at a price less than the average.

DAVIS

THE MOST EAGER LOADER YOU EVER SAW

The Davis Loader was cut out to do more work, and once you use it, you'll agree. With strength built in, it has no encumbering braces to mar your vision, or to hamper its work in close quarters. Positive-grip valve lets you handle jobs faster, more efficiently. Many attachments give extra versatility. Quality made, yet reasonably priced. Available for most tractors.

SOLD AND SERVICED NATIONWIDE BY BETTER DEALERS

Please send me literature on Davis Back-Hoe ☐ and the Davis Loader ☐ to fit a _____ tractor.

NAME _____

ADDRESS _____

TOWN _____ STATE _____

MID-WESTERN INDUSTRIES, INC.

1009 S. WEST STREET DEPT. A WICHITA, KANSAS

- ✔ Chemical Test
- ✔ Sand Compression Test
- ✔ Wall Thickness Test
- ✔ Rockwell Hardness Test
- ✔ Talbot Strip Test
- ✔ Pipe Ring Compression Test
- ✔ Internal Pressure Bursting Test
- ✔ External Impact Test

Some, but not all, of the many tests we make to assure you more long years of trouble-free service with Alabama's Super De Lavaud Cast Iron Pipe. Sizes of 3" to 24" in modern long lengths. Bell and Spigot, Roll-on-Joint, Mechanical Joint, and Flanged.

ALABAMA PIPE COMPANY

We invite inquiries to our nearest sales office—

122 So. Michigan Avenue, Chicago 3, Ill. — 350 Fifth Avenue, New York 1, New York

General Sales Offices

ANNISTON, ALABAMA

For 11 Years First and Best

FOG APPLICATOR FOR FLY and MOSQUITO CONTROL

TIFA

TODD INSECTICIDAL FOG APPLICATOR

1. Best by test, by performance . . . on the dump, over pools, wherever insects swarm.
2. Clean, **all-permeating** fog using newest or older insecticides, solution, emulsion or suspension.
3. Wet or dry penetrating fog, droplet control from ½ to 200 microns.

★ *Carrying underwriters' listing seal.*

Write for illustrated folder with full details and official comments.

PRODUCTS DIVISION

TODD SHIPYARDS CORPORATION

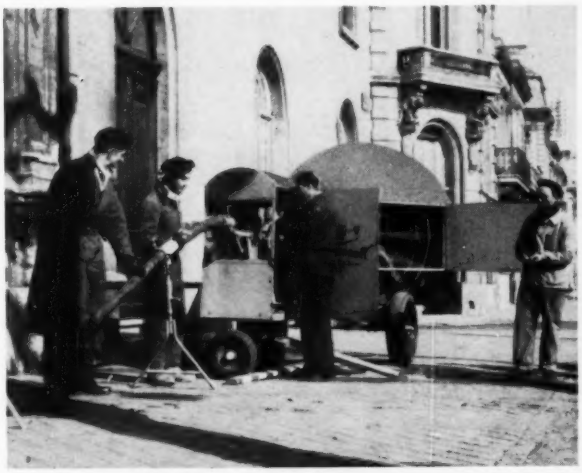
HEADQUARTERS: Columbia and Halleck Streets, Brooklyn 31, N. Y.

PLANT: Green's Bayou, Houston 15, Texas

BORDEAUX, FRANCE, OPENS ABANDONED SEWER in 30 minutes!

Bordeaux would have been satisfied if the SeweRodeR had opened this line in any reasonable time; they never dreamed it would be flowing within 30 minutes after starting the job. Before the SeweRodeR arrived, a French crew, using their regular cleaning methods, had given up after a week of futile effort.

According to a recent survey in the U.S., average sewer replacement costs are about $11.50 per foot. Under conditions similar to those in Bordeaux, the SeweRodeR could easily pay for itself on the first job by saving pipe marked for replacement.



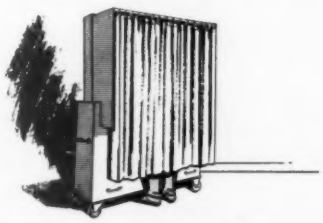
The ***SeweRodeR*** *not only does "impossible" jobs, but it does them faster, with lower costs per foot of pipe cleaned, and with greater safety and improved working conditions. Contact your nearest "Flexible" distributor for full details.*

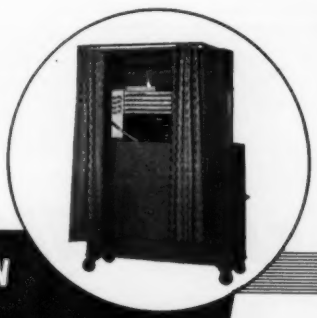
FLEXIBLE INC.
3786 Durango Ave., Los Angeles 34, Calif.
(Distributors in Principal Cities)

In More Than 7,000 Communities Using the Automatic Voting Machine - - -

Absolute secrecy is assured the Voter...

Each voter casts and *records* his own vote in absolute secrecy provided only with voting machines. Only the voter will ever know how or for whom he voted.





Investigate all the advantages of machine voting by writing—

AUTOMATIC VOTING MACHINE CORPORATION
JAMESTOWN, NEW YORK

NEW
SEA-HORSE
5½

Ready to go, *now*—emergency truck of the Davenport, Iowa Police Department

DEPENDable

No delays or excuses tolerated here! That's why police and fire departments everywhere specify DEPENDable Johnson Sea-Horses.

Now, for 1956, there are nine Sea-Horses. A size for every need. And, there are great new features that are blessings in emergency work, time and again. Easier, smoother starting for example. Stall-Proof Idling—which prevents accidental stalling of motor when shifting and maneuvering. Cruising Range Fuel Saver—which saves one gallon of gas out of every five. And more!

See your Johnson Dealer. He will gladly help you select the right power for your needs. Look for his name under "Outboard Motors" in your classified phone book.

9 MODELS FOR 1956

*JAVELIN	30 hp	$582.00
*SEA-HORSE 30	30 hp	552.00
SEA-HORSE 30	30 hp	462.00
*SEA-HORSE 15	15 hp	452.00
SEA-HORSE 15	15 hp	362.00
SEA-HORSE 10	10 hp	321.00
SEA-HORSE 7½	7½ hp	241.00
SEA-HORSE 5½	5½ hp	216.00
SEA-HORSE 3	3 hp	146.00

**Electric Starting... Prices f.o.b. factory, subject to change... OBC certified brake hp at 4000 rpm (30's at 4500 rpm).*

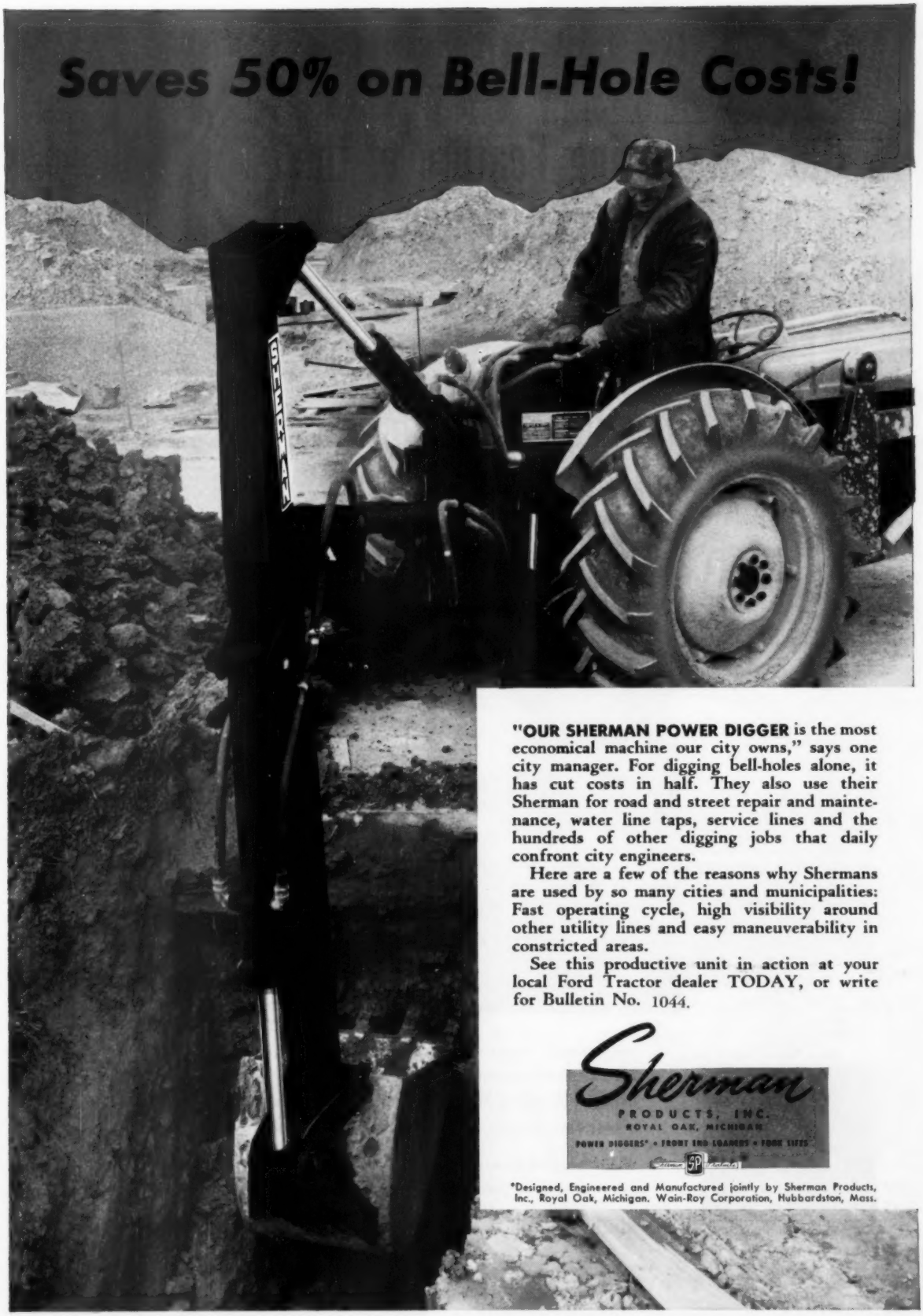
FREE. Catalog describing all nine 1956 Johnson Sea-Horses. Complete. Factual. Helpful. Send for your copy now.

JOHNSON MOTORS, 6000 Pershing Road, Waukegan, Illinois
A DIVISION OF OUTBOARD, MARINE & MANUFACTURING COMPANY
In Canada: Manufactured by Johnson Motors, Peterborough

Johnson SEA-HORSE OUTBOARD MOTORS

ALL JOHNSON SEA-HORSES ARE PROTECTED AGAINST SALT WATER CORROSION — NO FLUSHING NECESSARY

Saves 50% on Bell-Hole Costs!



"OUR SHERMAN POWER DIGGER is the most economical machine our city owns," says one city manager. For digging bell-holes alone, it has cut costs in half. They also use their Sherman for road and street repair and maintenance, water line taps, service lines and the hundreds of other digging jobs that daily confront city engineers.

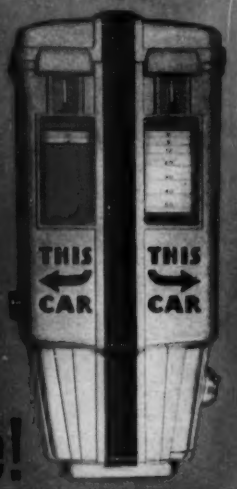
Here are a few of the reasons why Shermans are used by so many cities and municipalities: Fast operating cycle, high visibility around other utility lines and easy maneuverability in constricted areas.

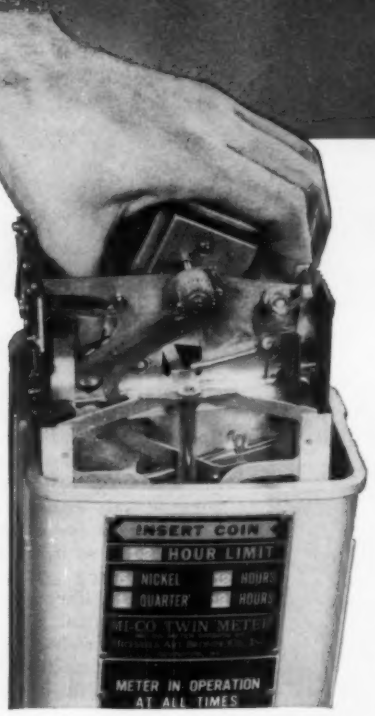
See this productive unit in action at your local Ford Tractor dealer TODAY, or write for Bulletin No. 1044.

Sherman
PRODUCTS, INC.
ROYAL OAK, MICHIGAN
POWER DIGGERS* • FRONT END LOADERS • FORK LIFTS

*Designed, Engineered and Manufactured jointly by Sherman Products, Inc., Royal Oak, Michigan. Wain-Roy Corporation, Hubbardston, Mass.

Quick Servicing Feature of the MI-CO TWIN AUTOMATIC Assures Maximum Productive Time!





MICHAELS PRODUCTS:

Bank Screens and Partitions
Welded Doors
Store Fronts (special)
Building Skins
Spandrels
Louvers
Windows (special)
Revolving Doors
Stair Railings
Church Work (special)
Candelabras
Name Plates
Letters
Check Desks
Lamp Standards
Marquees
Tablets and Signs
MI-CO Parking Meters
Museum Trophy Cases
Bronze Inurnment Urns
Bronze Vases
Misc. Metal Work

Bronze and Aluminum Plaques

The illustration at the left shows how easy it is to service a MI-CO Twin Automatic Parking Meter. Simply unlock and remove the cover, lift out the works, adjust, replace, lock on the cover. That's all there is to it. The entire mechanism is built in one compact unit with all parts easily and quickly accessible. Adjustments are usually made at the meter location, and the meter is back in operation in a matter of minutes.

This is one of the many features that make MI-CO Twin Automatics your best parking meter buy. They are consistently high producers because maintenance expense is inconsequential. And you can depend on this: MI-COs will continue to be high producers for many years. Reports from cities where MI-COs have been in operation ten years and more reveal that they are still giving new meter performance.

We'll be glad to send more information and MI-CO Meter performance records of many installations.

MI-CO PARKING METERS, P. O. Box 668-A, Covington, Kentucky
(The Michaels Art Bronze Co., Inc.)

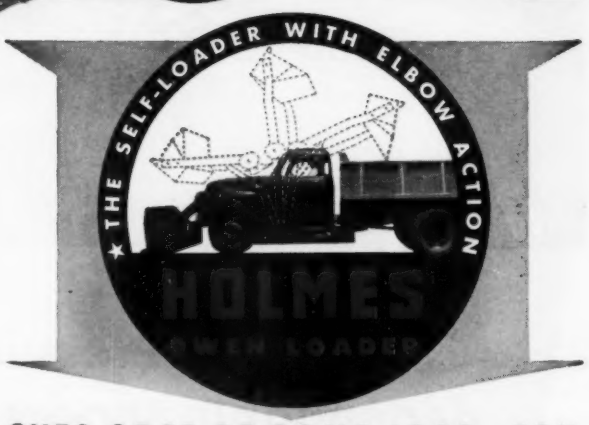
NEW Forward-Tipping BUCKET

*BROADENS USE OF LOADER**

*PERMITS LOADING OF OTHER TRUCKS

New Feature Offers *BIG SAVINGS* In Material Handling!

Introduction of the New Forward Tipping Bucket opens-up an entirely new field of work for trucks equipped with a Holmes Owen Loader. Development of this new feature now makes it possible for the loader to be used as an independent working unit, capable of doing its own digging, loading and dumping; or, as loader for a fleet of dump trucks. The new type bucket is hydraulically operated by two double acting cylinders, mounted on the top side of each bucket arm. Through controls located on the steering column, the bucket may be easily rotated 120 degrees. This allows the operator to turn the digging edge down when necessary for loading, move the bucket forward or backward for dumping.



CUTS COST OF SOME JOBS—50%

Being able to eliminate the use of additional man power and equipment, on such jobs as; grading, loading, cleaning-up and even loading of other trucks – saves time, labor and equipment, which substantially reduces the cost of material handling. A truck with such versatile one-man operation can easily do the work of several men, and as such, becomes a valuable asset in reducing today's high cost of operation. The Holmes Owen LOADER is hydraulically operated, lifts ½ yard per bucket, loads the average truck in 4 minutes and can be installed on most 1½ to 2 ton trucks. See your Equipment Dealer or write today for literature and prices.

ERNEST HOLMES COMPANY
Chattanooga Tennessee

Transite Pressure Pipe assures dependable service through the years

ENGINEERS and city officials face much the same problem in pipe selection. It is twofold: (1) How to make sure the community gets many long years of trouble-free performance from its pressure mains, and (2) How to do this as economically as possible by choosing pipe for durability plus savings.

Transite® Pressure Pipe is solving this problem in hundreds of municipalities and water districts from coast to coast. Here's why. An asbestos-cement product, strong and durable and highly resistant to corrosion, it has effected economies in installation as well as operation.

For example, the community benefits even at the very outset, since both handling and assembly of Transite Pressure Pipe are so simple that crews can install as fast as trench is opened. This means lower installed costs.

Another Transite Pipe characteristic instantly recognized by engineers as of major importance is its smooth interior that stays smooth. This provides maintained high flow capacity. (Flow coefficient is C-140.)

, , ,

For further information about Transite Pressure Pipe with the Ring-Tite® Coupling, write for Booklet TR-160A. Address Johns-Manville, Box 60, New York 16, N. Y. In Canada, Port Credit, Ontario.

JM

Johns-Manville TRANSITE PRESSURE PIPE
WITH THE RING-TITE® COUPLING

½ million

PARK-O-METERS

in more than 1200 cities . . .

The same features that have made PARK-O-METERS the choice of principal cities throughout the United States have caused their adoption by the more progressive cities in other areas. You will find them in

Alaska	Hawaii
Canada	South America
Central America	New Zealand
Australia	Israel
South Africa	

PARK-O-METERS are automatic in operation . . . accurate under all conditions . . . precision engineered . . . sturdy beyond expectation. They are convertible to meet every need and simple, *on-street* adjustment permits use of Pennies, Nickels, Dimes and Quarters, any one or more in any combination through a single slot.

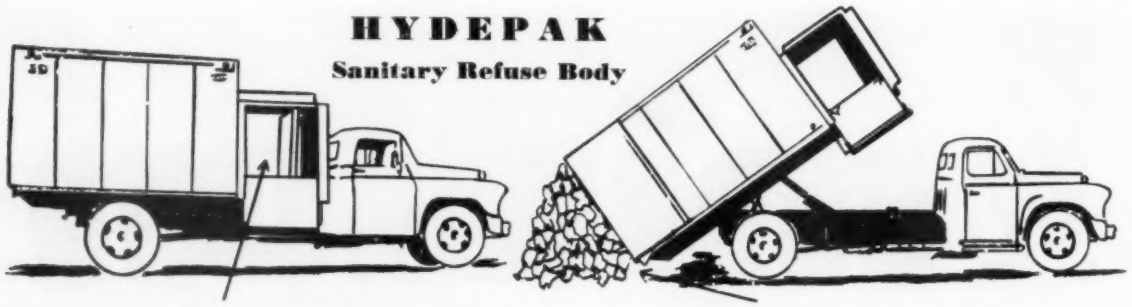
ENGLISH MANUFACTURER
Venner Limited
New Malden, Surrey, England

CANADIAN MANUFACTURER
Park-O-Meter Company of Canada
Toronto, Canada

CREATED by the ORIGINATORS of METERED PARKING

HYDEPAK

Sanitary Refuse Body



LOADS IN FRONT

Loaders always in plain view of on-coming traffic. Driver can assist in loading . . . three short steps will put him in the driver's seat when ready to drive to next stop.

PACKER—Direct action hydraulic ram. Limited cycle type action.

COMPACTION—36,000 lbs. force applied to packing blade, pushes material into storage compartment.

OPERATION—Automatic push-button control. Can be loaded from either side of truck. Dual controls located at sides of loading chamber—start, stop or reverse the packing cycle.

UNLOADS IN BACK

Deposits load in highly compressed composite pile. Will dump directly into a sanitary fill trench or into an incinerator hopper without further effort.

LOW INITIAL COST—Permits municipalities and contractors with limited budgets to have modern Refuse Collection Equipment.

ECONOMICAL MAINTENANCE—Gasoline and oil mileage far below other makes of packers. Most parts are standard automotive items which can be purchased at your local parts house.

CAPACITY—Equals high priced packers of same cubic yardage. Above those in comparative price range.

For Information Write— ***—Sold Through Distributors***

THE HYDE CORPORATION

Post Office Box 1265 **Fort Worth 1, Texas**

IF

ONE OF YOUR PROBLEMS IS

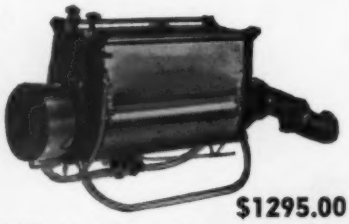
INSECT CONTROL

. . . THIS SHOULD INTEREST YOU!

. . . an insecticidal fog generator that—

- Outsells all other types in Florida and Texas
- Is in regular use at U. S. Air Force Bases
- Weighs just 100 lbs., yet does work of much heavier machines.

Dyna-Fog



Simple to use . . .
Potently effective . . .
Widely sold . . .
Dyna-Fog merits your investigation.

$1295.00

EXTRA!

Our "Machine Loan" Program provides "sub" unit, should yours ever be out of action for servicing.

NOTE: Ask about our 19 lb. Dyna-Fog Jr. for that specific insecticidal fogging job.

Write for Complete Information!

Curtis **AUTOMOTIVE DEVICES, INC.**
Dyna Products Division

P.O. Box 232-B
Bedford, Indiana

ELEVATED STEEL TANKS

- Elevated Steel Tanks for water supply, ranging from 5,000 to 2,000,000 gallons—ranging from standard hemispherical self-supporting bottom to spherical tank on tubular tower.

Correctly built in accordance with AWWA specifications. Send us your inquiry, stating capacity, height to bottom and location. Established 1854. Write for *Tank Talks.*

R. D. COLE MANUFACTURING CO. COLE NEWNAN, GEORGIA

Elevated Tanks, Pressure Vessels, Chemical and Processing Equipment from Aluminum, Stainless and Carbon Steel, Monel and Other Alloys.

Established 1854

R. D. COLE MANUFACTURING CO.
NEWNAN, GEORGIA

Grotelite REFLECTIVE SHEETING

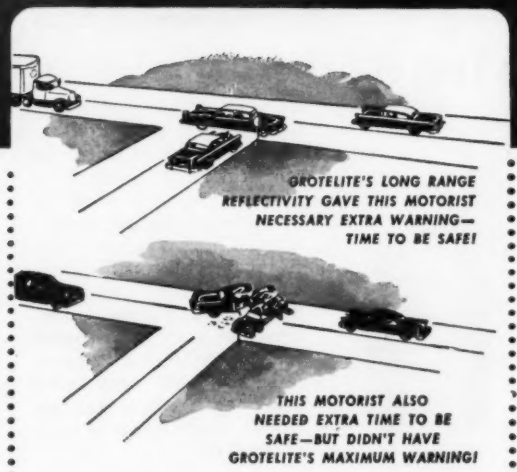
gives the motorist time to be safe!

STOP
AVERAGE STOPPING DISTANCE 132 FEET AT 40 M.P.H.
BRAKING DISTANCE
ALTHOUGH GROTELITE STILL CLEARLY LEGIBLE, IT'S TOO LATE TO HEED WARNING OF ANY TYPE IN THIS DANGER ZONE.
REACTION DISTANCE
GROTELITE SS CLEARLY LEGIBLE THROUGHOUT THIS DISTANCE!
GROTELITE SS VISIBLE HUNDREDS OF FEET BEFORE THIS POINT!

Too late to be warned, or *time* to be *safe* . . . Grotelite SS can make the difference! The traffic control sign reflectorized with Grotelite SS provides outstanding target value. It *alerts* and *warns* at the greatest distance from the point of danger. Through the blackest night, in any weather . . . Grotelite SS can be seen *farther*, seen *clearer*, seen *quicker* by the motorist!

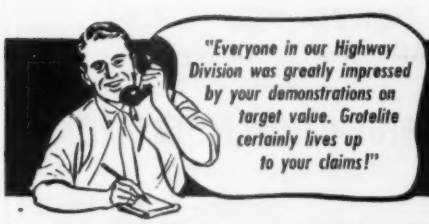
Made For Maximum Warning!

Grotelite SS is the *improved Smooth Surface* reflex reflective sheeting. Formulated from *acrylic* (methylmethacrylate) plastic, it has over 26,000 optical lenses per square inch. Strongly reflects light beams directly to their source. Only Grotelite SS offers such long range brightness and clearness.


GROTELITE'S LONG RANGE REFLECTIVITY GAVE THIS MOTORIST NECESSARY EXTRA WARNING— TIME TO BE SAFE!
THIS MOTORIST ALSO NEEDED EXTRA TIME TO BE SAFE—BUT DIDN'T HAVE GROTELITE'S MAXIMUM WARNING!

GROTELITE SS is available in precut sheets for easy application. Also available on finished signs of all types. Four colors: yellow, red, green and silver (white).

Send today for Catalog No. 754-T . . . and for complete facts!


"Everyone in our Highway Division was greatly impressed by your demonstrations on target value. Grotelite certainly lives up to your claims!"

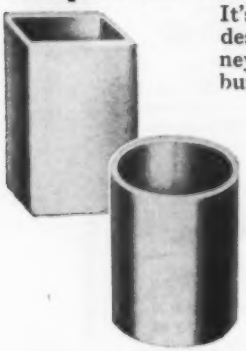
THE GROTE MANUFACTURING COMPANY, INC. • Established 1901 • Bellevue, Kentucky • Opposite Cincinnati

Protect your community with

BUILT-IN FIRE INSURANCE

CLAY FLUE LINING

Stops 1 out of 5 Fires at the Source!



It's a fact! One out of every five destructive fires starts in the chimney. That's why homes with the built-in protection of Clay Flue Lining are welcomed by fire prevention authorities. Clay Flue Lining is 100% fireproof. It withstands the heat, does not accumulate dangerous quantities of soot, and never wears out. Be sure to provide for this easy-to-install, economical protection in every home in your community!

CLAY FLUE LINING *Institute*

You Can Trust This Mark of Quality

WRITE FOR "Recommended Building Code Text for Chimneys and Flues" and refer to it when revising your code or writing a new one. It's FREE on request. And if you need data on Clay Flue Lining—sizes, installation, supply sources — call or write CFLI.

CLAY FLUE LINING INSTITUTE
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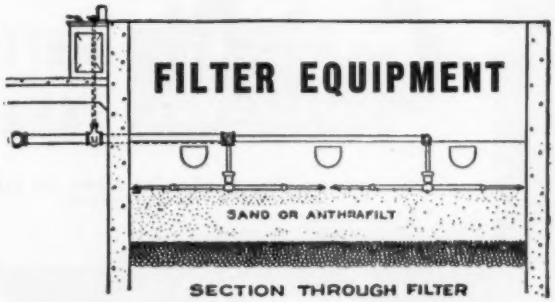
FL-456 14C

PALMER

FILTER EQUIPMENT



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CORROSION

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Corrosion will cost American industry more than seven *billion* dollars this year! And many more billions of dollars worth of capital equipment will be corroded away in the years to come. To help cut this enormous, and largely needless, waste is an important part of Koppers business.

As the world's leading producer of coal tar base enamels and coatings, we have devoted many years and many man-hours of laboratory research and field work to the problem of *preventing* corrosion. Probably we have within our extensive organization more useful knowledge and experience in corrosion prevention than exists in any other single place. To put that knowledge and experience at your disposal in cutting your corrosion costs, we are initiating a series of informal reports. The first of the series appears at the right.

We hope you'll find these reports on "How to Cut Corrosion Losses" both interesting and helpful. To make them so, we'd like to know about your corrosion problems—especially the unusually difficult ones.

Write: Koppers Company, Inc., 1301 Koppers Building, Dept. 103G, Pittsburgh, Pa. District Offices: Boston, Chicago, Los Angeles, New York, Pittsburgh and Woodward, Ala.

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COATINGS AND ENAMELS

how to

CUT CORROSION LOSSES

a report by Koppers Company, Inc.

W. E. Kemp,
Manager of the Technical Dept.

Although corrosion losses are never listed on a profit and loss statement, they represent a considerable—and often unnecessary—loss to every industry. Preventing this loss is a big part of our business as the world's leading producer of coal tar base enamels and coatings.

* * *

Many times every week we get a phone call, wire or letter asking the same, often harried, question: "Can you help me with this corrosion problem . . . ?" In most cases, we *can* help, and are most happy to do so. In fact, our Coal Tar Technical Department is designed to facilitate such help.

Basically, we have two groups within the Technical Department—the Development Group and the Technical Service Group. They are both headquartered at Verona, Pa., in a new building with the latest facilities for laboratory work and pilot plant operations. This building also houses the Quality Control staff of the Tar Products Division. These ten chemists cross-check the quality control operations of each plant.

Our Development Group consists of a General Supervisor, Mr. Frank Charlton, and two project leaders who supervise the activities of nine chemists and engineers. They work constantly to up-grade the effectiveness of Bitumastic coatings and to develop new coal tar coatings.

Our Technical Service Group, supervised by Mr. C. U. Pittman, also includes two project leaders and four laboratory workers. These men work in close liaison with our customers, distributors and sales engineers to help them specify the best coating and the most economical application for the job.

We also retain the services of two widely-known coating and corrosion scientists: Dr. W. F. Fair, Jr. and Mr. R. C. Stromquist. Both of these men—and each member of the Technical Department supervisory staff—have had more than 20 years' experience in the bituminous coating field. Dr. Fair and Mr. Stromquist work with all departments and, through first-hand field experience in their extensive travel, alert us to customer needs for new or modified protective coatings.

* * *

Naturally, many of our technical personnel participate quite actively in industrial and technical organizations. One of our coatings consultants, Dr. W. F. Fair, Jr., actually is serving full time this year as president of the National Association of Corrosion Engineers. Altogether, 70% of our men are members of scientific and technical societies. They participate actively on committees working on industry-wide problems.

In future columns, we plan to report to you on specific corrosion problems in such industries as steel, gas, petroleum, water supply and sewage and industrial wastes. In the meantime, we'd like to hear about your problems. Write to Koppers Company, Inc., 1301 Koppers Building, Dept. 103G, Pittsburgh, Pa.

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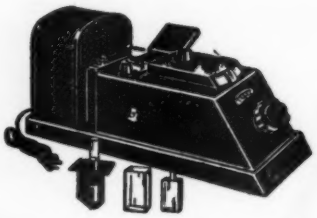
KLETT SUMMERSON

ELECTRIC PHOTOMETER

Adaptable for Use in Water Analysis



Can be used for any determination in which color or turbidity can be developed in proportion to substance to be determined.

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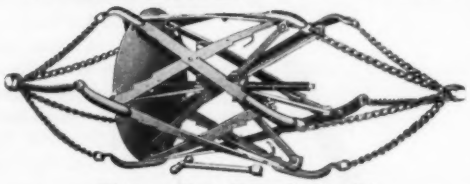
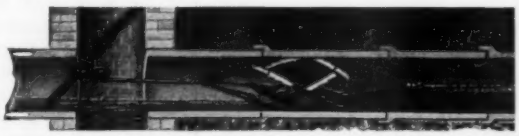
EXPANDING ROOT CUTTER SEWER CLEANER



Fits in on Every Sewer Cleaning Job
Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.



Open and in action removing roots and cake sediment like this.

Write for our new catalog on complete sewer cleaning equipment.

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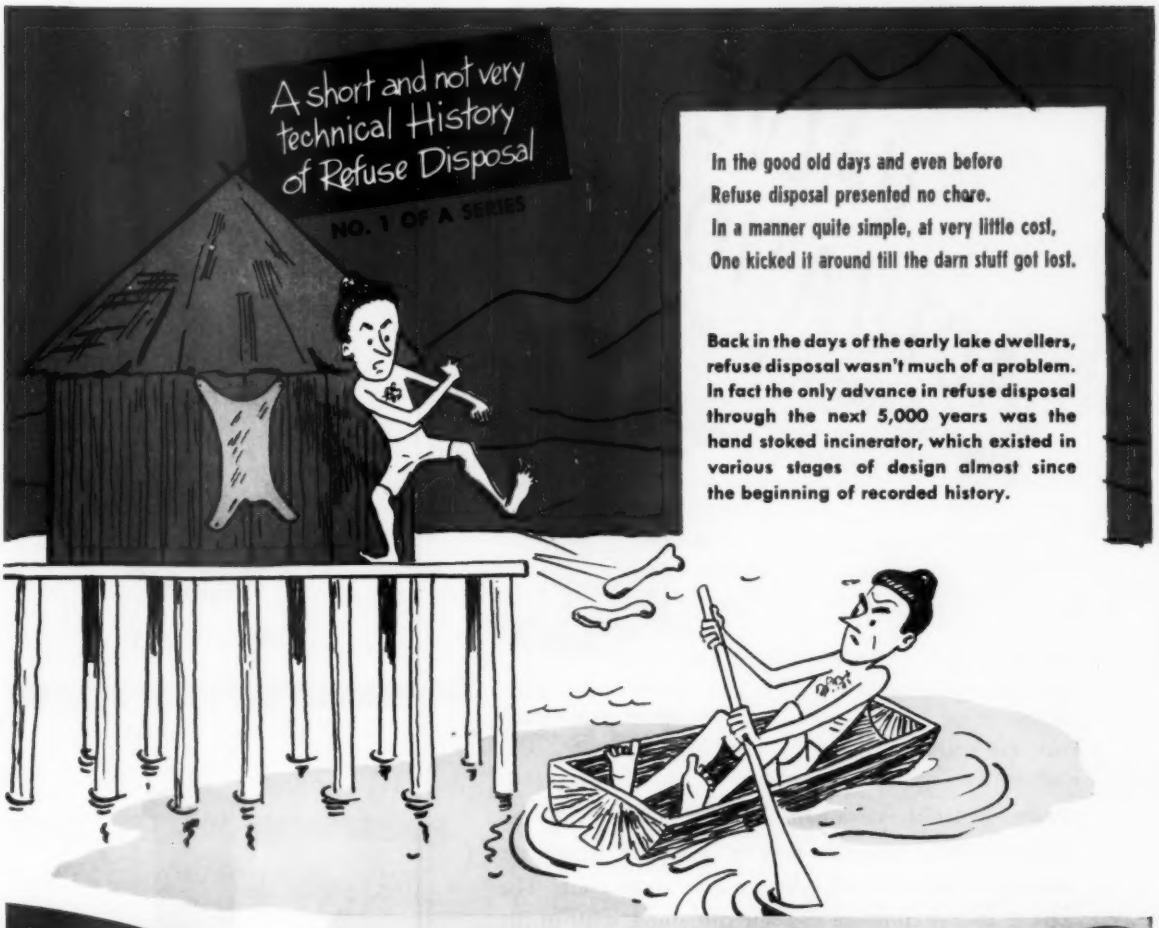

In the good old days and even before
Refuse disposal presented no chore.
In a manner quite simple, at very little cost,
One kicked it around till the darn stuff got lost.

Back in the days of the early lake dwellers, refuse disposal wasn't much of a problem. In fact the only advance in refuse disposal through the next 5,000 years was the hand stoked incinerator, which existed in various stages of design almost since the beginning of recorded history.

But, in

1941....

Mr. C. W. Nichols introduced the first circular mechanically stoked furnace for the incineration of municipal refuse . . . the MONOHEARTH . . . bringing to communities large and small the advantages of compact, efficient, low cost refuse disposal. At right: Orlando, Florida plant, first Monohearth installation.

Nichols Monohearth

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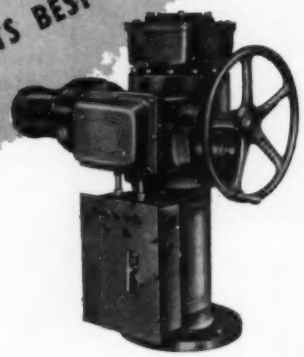
VALVE ACTUATION

ENGINEERING AT ITS BEST



Motor Operated Stand with Integral Control Equipment.

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Manual operation is provided for all electric and air motor operated valves. Our engineers will be glad to help you lay out a plan based on the many years of Ludlow experience in power actuation systems of all kinds for all purposes.

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CYLINDER OPERATED VALVE

THE LUDLOW

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TRADE LUDLOW MARK

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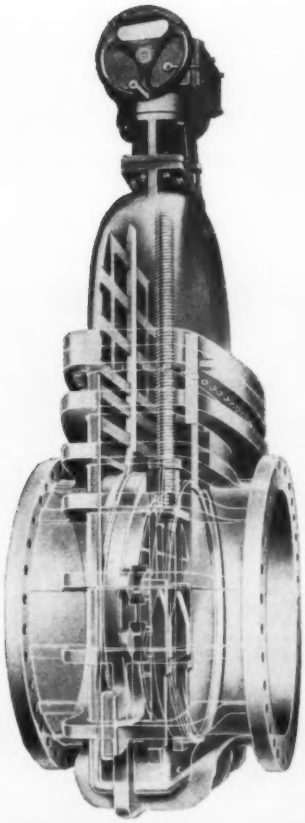
CHECK VALVES • TAPPING SLEEVES • AIR RELEASE VALVES



SQUARE BOTTOM VALVES

The Rensselaer Square Bottom Valve may well be called the "work horse" of the valve family. It is built to stand up under the severe conditions found in automatic operation, throttling, differential pressures and the constant opening and closing found in filtration plants and process industries.

A three-point gate support holds the downstream gate away from its seat ring at all points of travel except the final, fully closed position. Any tendency for the downstream gate to tilt and score the face of the seat ring under conditions of high water velocity or throttling service is eliminated.

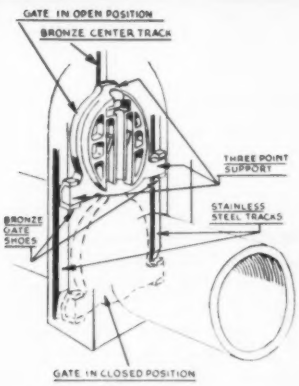
At all points this valve is built for long life under constant and severe operation.

IN OPENING: the shoes slide up the stainless steel track inclines to the higher level of the tracks, lifting the gate clear of the bronze seat ring.

IN CLOSING: the gate does not come in contact with the bronze seat ring until the closing point is reached. Even when partly open, the gate is held away from the seat, eliminating all wear due to vibration.

Rensselaer Square Bottom Valves are made in sizes from 4 to 48" with any type end connection. By-passes, spur or bevel gearing, and cylinder or motor operation as desired.

20



Ask for Bulletin "E"

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DIVISION OF THE LUDLOW VALVE MANUFACTURING CO., INC.

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CHECK VALVES • TAPPING SLEEVES • AIR RELEASE VALVES

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INSTEAD OF TWO

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So why put up with the fuss and expense of *two* measuring units when *one* Style 3 will do the job? You'll find conclusive evidence in your own records . . . or ask your Neptune man.

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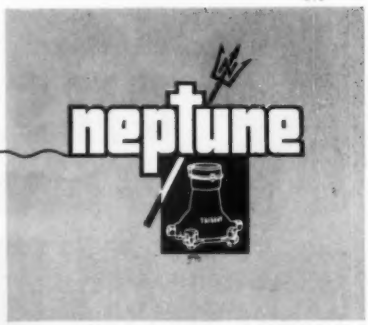
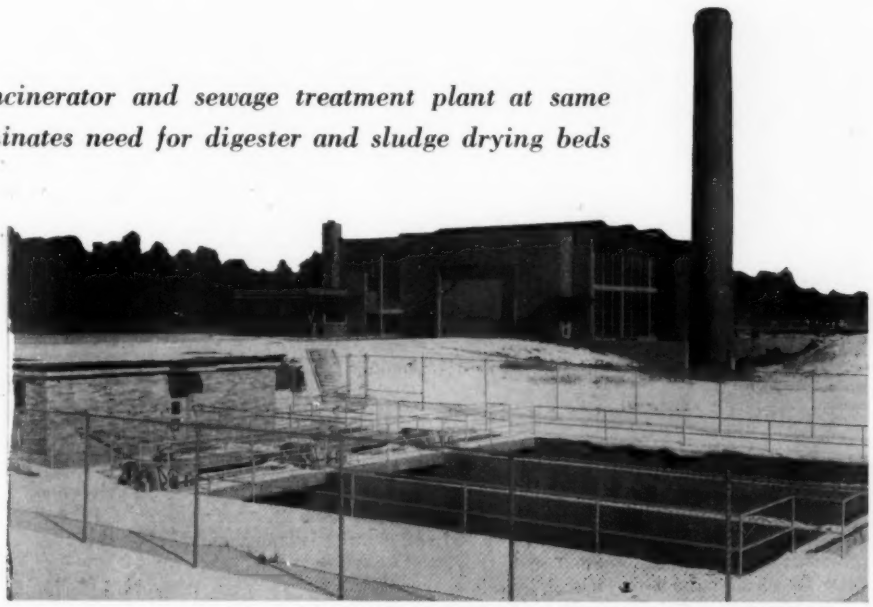


JULY 1956 The American City

Two Plants for the Price of One

Combined incinerator and sewage treatment plant at same location eliminates need for digester and sludge drying beds

By H. J. EVERS
Manager, Water and Sewage Utility
Merrill, Wis.



This combined sewage treatment and incinerator installation effectively handles the Merrill waste disposal problem.

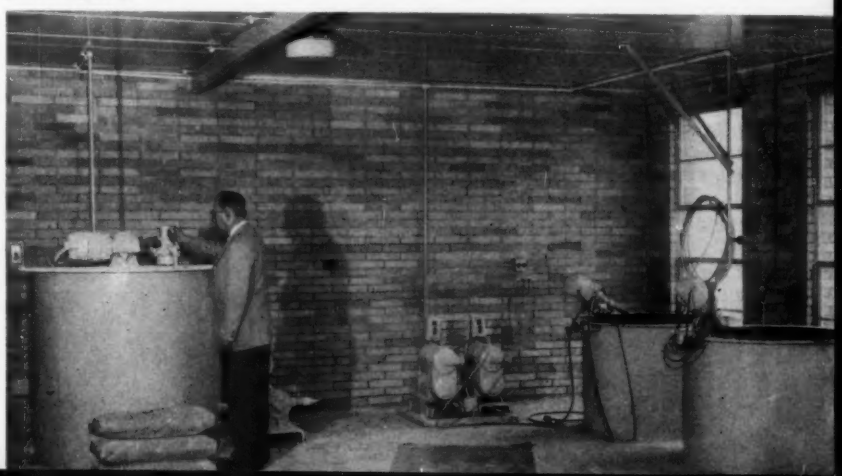
BY FACING the issue and doing more than was required, Merrill now enjoys the benefits of a sewage treatment plant and an incinerator. The incinerator can be considered as a bonus, for by utilizing it to burn the dewatered sludge cake, a digester was not needed, and the two plants together cost no more than a digester-type sewage treatment plant of equal size.

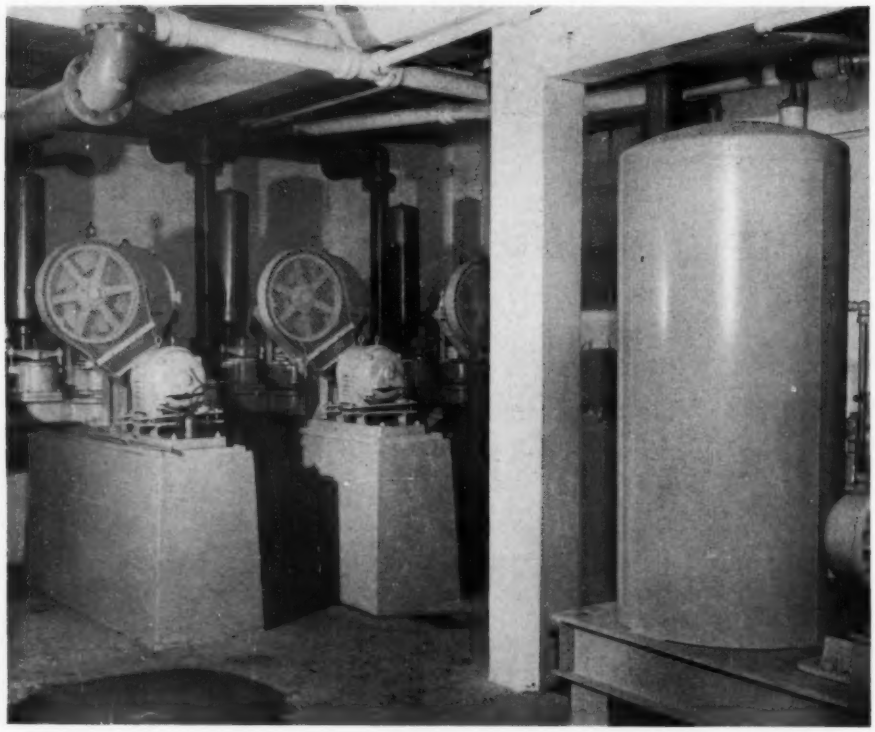
New Sewers

As in most cities, Merrill's original sewer system was of the combined type with outfalls to the Wisconsin River. During 1935 and 1936, the McMahon Engineering Company of Menasha, Wis., made a survey of the system and completed detailed plans for separation of the storm and sanitary sewage. This work was begun in 1939 and continued in 1940. Several sections of the city obtained complete separate systems and part of a 27-inch diameter interceptor was laid. No additional work was done until 1954 when the city awarded a contract to Farmer Brothers of Tomah, Wis., for approximately 14,400 feet of sewers. This contract included 12,200 feet of Johns Manville Transite pipe, 10 inches to 24 inches in diameter, and 2,200 feet of mechanical joint cast-iron river-crossing pipe, 6, 8, and 10 inches in diameter.

Our sewage treatment plant was

Ferric chloride and lime are added to the raw sludge prior to filtration. The 150-gallon tanks (right) contain ferric chloride solution; the lime tank has a 375-gallon capacity.





Three automatically controlled sludge pumps transfer the settled sludge from the collecting wells to the sludge holders.

one of many built upon recommendations of the Wisconsin State Board of Health in an effort to clean up the rivers and streams of the state. Once faced with the issue of sewage treatment, city officials determined to go all the way and provide additional sanitary disposal facilities for garbage and trash as well. As a result, the McMahon Engineering Company was again called in to assist in the preparation of an overall waste disposal program. After a thorough investigation of all types of treatment and disposal, the engineers and the writer recommended that a combined program be adopted for sewage treatment and incineration.

Primary Treatment

Design of the plant is based on a flow of approximately 1⅓ mgd (million gallons per day), almost double the present flow of 706,000 gallons per day. This allows for the treatment of all domestic and industrial wastes, including one milk condensary, but with the exception of the paper and canning plants. These industries treat their own wastes.

Sewage enters the plant through a Parshall flume equipped with an integrating and recording-type meter manufactured by the Republic Flow Meter Company. The sewage then flows through a Model 15M Chicago Pump Company Comminutor, two pre-aeration tanks, and into three primary settling tanks. Walker Process Equipment Inc., of Aurora, Ill., supplied the pre-aeration equipment, sludge collectors, and weirs, troughs, and baffles. The two Howell Downdraft Aerators are driven by 7.5-hp motors, and ½-hp Westinghouse motors operate the sludge collectors and Helicoid cross collectors in the rectangular settling basins. A Wallace & Tiernan chlorinator adds chlorine to the plant effluent before it is discharged into the river.

Sludge Collection

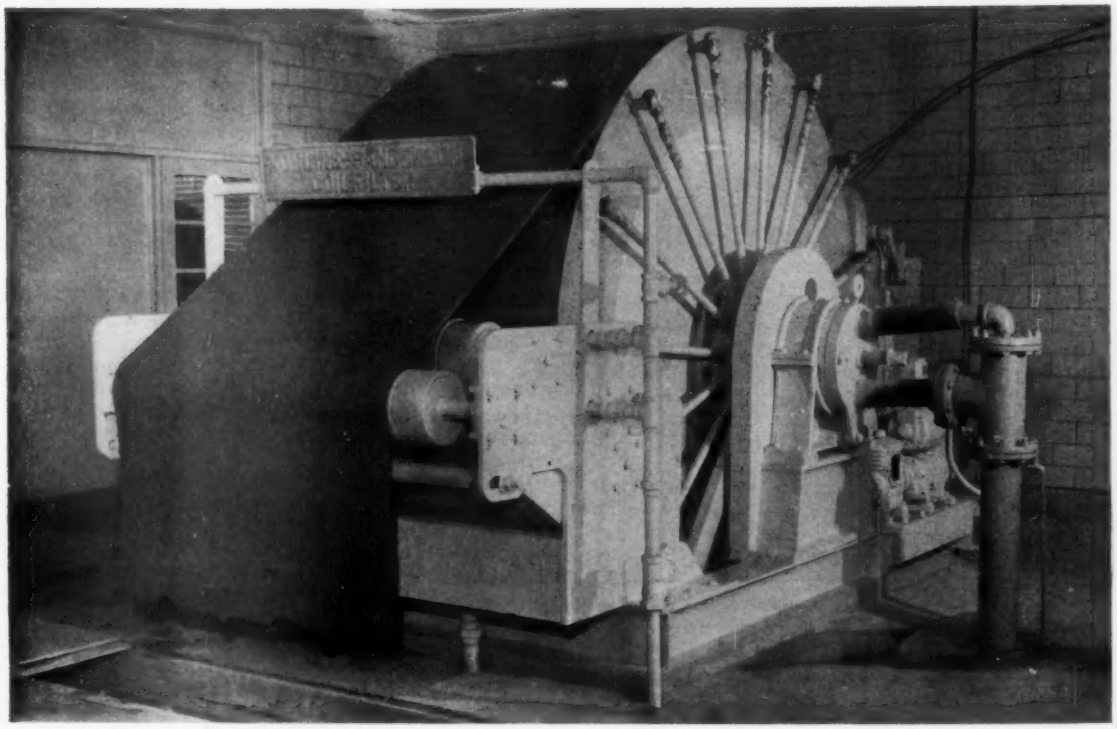
The sludge is moved to the end of each settling tank and is then pushed into a holding well by the Helicoid cross collectors. Three 12-inch Marlow plunger-type sludge pumps, each rated at 150 gpm and driven by 3-hp motors, transfer the sludge from the holding wells to the sludge holding tanks. After sufficient sludge has been accumulated, it is conditioned with high-calcium lime and dewatered in a Komline-Sanderson spring-coil filter.

Operation of the three sludge pumps is controlled by a #AC-3T three-pump control Bubbletrol furnished by the Automatic Control Company. This device operates on the principle of resistance to flow on bubbles of compressed air released into and through the sludge in a collection chamber. The resistance produces back pressure sufficient to operate mercoid controls turning pumps on or off. The Bubbletrol can be adjusted to operate the pumps with varying amounts of sludge in the collection chamber.

Sludge Disposal

When the Komline-Sanderson filter is to be operated, the sludge is pumped into a mixing tank by a 4-inch Marlow sludge pump. Here lime and ferric chloride are added to the sludge; the mixture then flows to the filter vat by gravity. A rocking-type mixer with cypress pickets provides the agitation needed to mix the chemicals with the sludge.

The filter consists of a 6-foot diameter drum with a 6-foot face covered with helical, coiled, stainless steel springs. The drum surface is separated into 16 compartments, each connected by a hose to permit application of vacuum for the withdrawal of filtrate. A 1-hp motor equipped with variable-speed drive rotates the drum at speeds from 12



The dewatered sludge cake drops into a trough and is conveyed to the incinerator or a waiting truck.

to 3 minutes per revolution. A Roots-Connersville type RCR 8-inch by 12-inch unit applies the vacuum. This unit, powered by a 15-hp motor through a V-belt drive, is capable of evacuating 300 cfm at 12 inches of mercury. A Marlow self-priming filtrate pump carries off the filtrate at the rate of 30 gpm.

As the sludge cake is dried, it falls from the roller into a trough set in the filter room floor. A Jamesway "barn cleaner" type conveyor then pushes the sludge cake to the sludge charging hole adjacent to the main incinerator charging gate. The sludge charging hole is equipped with a counterbalanced flap gate that automatically opens and shuts with the weight of the sludge cake. The same conveyor can also transport the dewatered sludge outside the building for discharge into a truck or other conveyance for use as fertilizer.

Pumping Station

A pumping station was constructed at the same time as the sewage treatment plant and incinerator. Two Fairbanks - Morse nonclog pumps force the sewage from the west bank of the Wisconsin River to the gravity interceptor on the east bank. These 4-inch units are powered by 3-hp electric motors. Pump well capacity at this station is such that electric power failure would not interfere with operation unless over a protracted period of time. Other equipment includes a Model 1B Chicago Pump sump pump and an Automatic Control Company Floatrol.

The interior of the structure is lined with Arketex Ceramic Corporation wall tile and has a steel spiral stairway furnished by Neenah Foundry Company.

The Incinerator

The 35-ton Pittsburgh-Des Moines furnace is housed in a modern structure of sufficient size to permit installation of a second unit when required. Trucks enter the building from one side, deposit the refuse directly on the charging floor and drive out the opposite side of the building. The charging room ceiling is high enough so that trucks may raise the dump bodies to full height. Both truck doors are electrically operated.

The refuse is fed manually through the charging gates onto Flynn & Emrich hydraulically operated grates. Ashes are removed by shoveling them into containers made from 50-gallon oil drums fitted with bail handles. The filled cans are trucked with a small hand truck to a 1,000 pound capacity P & H Hevilift hoist and hoisted to the charging floor for deposit into a city-owned, 2-ton International dump truck. The burnings for one day produce between six and eight drum loads of ashes. Ashes are deposited along with the nonburnable wastes in an abandoned gravel pit located adjacent to the plant. We removed enough gravel from the pit to cover all the nonburnable refuse when the proper fill level has been reached.

The plant operators maintain the dump grounds with a small John Deere tractor equipped with a hydraulically operated blade. The city uses one Leach packer-type collection truck of 16 cubic yards capacity, for weekly residential collections and uses a dump truck for semimonthly collections of separated noncombustible refuse from residences. Commercial, industrial, and other collections are made by private concerns. Out-of-town residents and concerns may use the city's facilities if arrangements are made through the proper authorities.

The furnace includes a combustion chamber, preheater with 42 cast-iron tubes, forced-draft fan, and an indicating pyrometer. The air forced through the preheater may be sent under pressure to the 80-foot stack,

The high ceiling and electrically operated doors located on opposite sides of the building facilitate truck movements at the incinerator.

the burning area, or to a duct to provide heat for the building.

Each morning the grates are cleaned of all ashes and clinkers. A small amount of material from the previous day's collection is then placed in the grate area and ignited. After the fire has been started, incoming loads of garbage and refuse are fed to the furnace, soon bringing the furnace temperature up sufficiently high to burn sludge cake of 65% to 70% moisture.

The combined plant, incineration and sewage treatment, is operated by one full-time and one part-time employee under the supervision of the author. It is also their duty to maintain the nonburnable refuse dump area and the plant grounds.

The city anticipated building this plant some time ago and in 1950 established a sewer service charge, amounting to 50% of the water bill, to all properties being served. These revenues, set aside and ear-marked for the completion of the new plant, amounted to approximately $80,000 at the time of construction. The balance of the money was provided through the sale of revenue bonds. The bond sale, including accrued interest, produced an additional $438,547.85. We paid for the plans with a U. S. Government loan of $22,000. This money was repaid once the bonds were sold.

A contract in the amount of $223,722 was awarded to Burger and Vicker, Inc., of Wausau, Wis., for construction of the sewage disposal plant, incinerator building and sewage pump station. Total expenditure for the plants and sewers was approximately $530,000.

Annual operating costs, including bond interest and amortization, depreciation and small improvements, is estimated at $42,200. Operating revenues through sewer service charges plus an $8,000 annual charge to the city for incineration of garbage and trash, will amount to about $43,000.

The work was done under the administration of Mayor G. B. Cotter. The author is manager of the Merrill Water and Sewage Utility under direction of a committee of five councilmen. The mayor and city attorney are ex-officio members of this committee and Councilman Ellsworth Plantz is chairman.

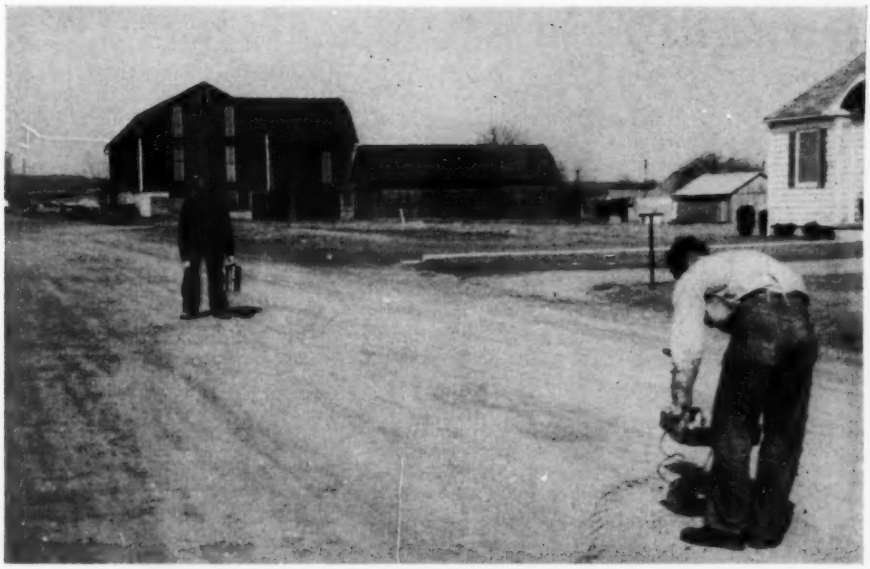
New City Hall at Discount Price

THE bond issue wasn't big enough to cover the cost of a new city hall in Hartwell, Ga. (population 4,000). So Mayor Lee E. Carter decided that the city should become its own contractor and build within its budget. The bond issue authorized $60,000, and the lowest bid was $10,000 higher.

The city hired or contracted for all the labor, and purchased all material through the city clerk's office. A local builder was retained on a monthly basis to supervise construction. The building will provide 5,000 square feet of usable area. The city clerk and the mayor will occupy offices in the front of the building. The police station, jail, and street department will be located at the rear, and the balance will be devoted to the fire station. The entire building will be air conditioned and will cost the city a total of $54,000.

A door goes on the fire department portion of Hartwell's new, budget-priced city hall. The building, which will be ready for occupancy shortly, will house, in addition to the fire station, the police department and jail, the street department, and the offices of the mayor and the city clerk.

Nonmetallic pipe is easy to locate with electronic pipe finders, if you know how



Pipe is simple to trace with a little advance preparation.

You Bury a Length of Old Telephone Wire

By ELMER LUTZ, *Water Superintendent, Selinsgrove Water Supply Co., Selinsgrove, Pa.*

BEFORE we could buy an electronic-type pipe finder, we had to learn how to use it to find nonmetallic pipe. A good portion of our system consists of asbestos-cement mains, and when we proposed that a pipe finder be placed on the budget, our general manager insisted we be sure that it would work.

Of course, we knew that these pipe finders, such as the M-Scope, could be used to trace the pipe in a general way by showing where the metal service lines end; but unfortunately, this often is not enough. We learned that we can locate the pipe easily and accurately if we plan for it in advance. All we have to do is string some wire in the ditch directly over the pipe.

We weren't convinced until we had tried it. Assistant Superintendent Ed. Searer and I arranged to lay down some wire on a new line of asbestos-cement line the length of a block. For this, we used some old double-twist telephone wire, stretching it from one valve to the other, making certain to fasten bare wire to the valves. Some of the wire still bore insulating, and some did not. The line was then covered by about four feet of backfill.

Broad smiles indicate complete satisfaction with the buried cable maneuver.

Before we made the test, we had the "help" of a fresh snowfall that covered all traces of the backfilled ditch. So we are convinced that the test is conclusive and impartial.

We used the standard procedure recommended when operating these finders. The device itself was the new M-scope Witch pipe locator with battery tester attached to both the transmitter and receiver. This simplifies checking the condition of the batteries at all times.

The experiment was a complete success. With it we were able to observe both audible and visual indications of the telephone wire as effectively as we could when tracing a cast-iron pipe of large diameter.

Improvements

Since making the tests, we learned that the finder can be supplied with a pulsating unit that gives off a positive rhythmic note that is impossible to confuse with any other signal. Thus the operator is always completely positive that the code signal he is receiving is the signal originating from the transmitter.

The pulsator circuit appears to increase the effective transmitter tracing power to greater distances than the standard steady signal provides.

As the result of this test, we now have our pipe finder, and all future asbestos-cement pipe will have a length of old telephone wire over it.

Baltimore's Newest

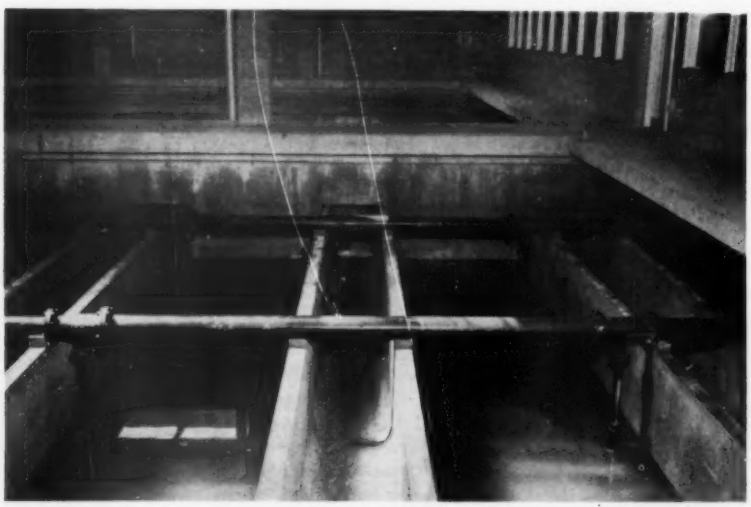
The 120,000,000 gallon per day Ashburton water-filtration plant will produce about half of the city's present requirements

By BERNARD L. WERNER
Water Engineer
Baltimore, Md.

Baltimore's new 120-mgd filtration plant during construction, note the plaques at the right of the main entrance.

THE new Ashburton Filtration Plant climaxes a $45,000,000 expansion program that included a new source of supply and construction of a dam, 17 miles of tunnel, the filtration plant, and connections to the present system. Rated at 120 mgd (million gallons per day), the plant can safely treat up to 180 mgd and will provide about half of the city's present-day water requirements.

Back in 1941, water requirements exceeded the safe available supply from the Gunpowder Falls, Baltimore's only water source. The following year the Board of Advisory Engineers, headed by Dr. Abel Wolman, and Gustav J. Requardt, of Whitman, Requardt and Associates, consulting engineers, recommended that the North Branch of the Patapsco River be developed as a second source of supply for the city. This supply would add another 95 mgd to the 148 mgd safe yield from the Gunpowder Falls. The new water source would feed various zones of service above the first zone. To accomplish this, a new filtration plant was needed within the city limits. The new Ashburton Filtration Plant was built to meet these needs and was named for the section of the city where it is located. The plant was designed by Whitman, Requardt and Associates of Baltimore and constructed by the Arundel Corp., also of Baltimore.

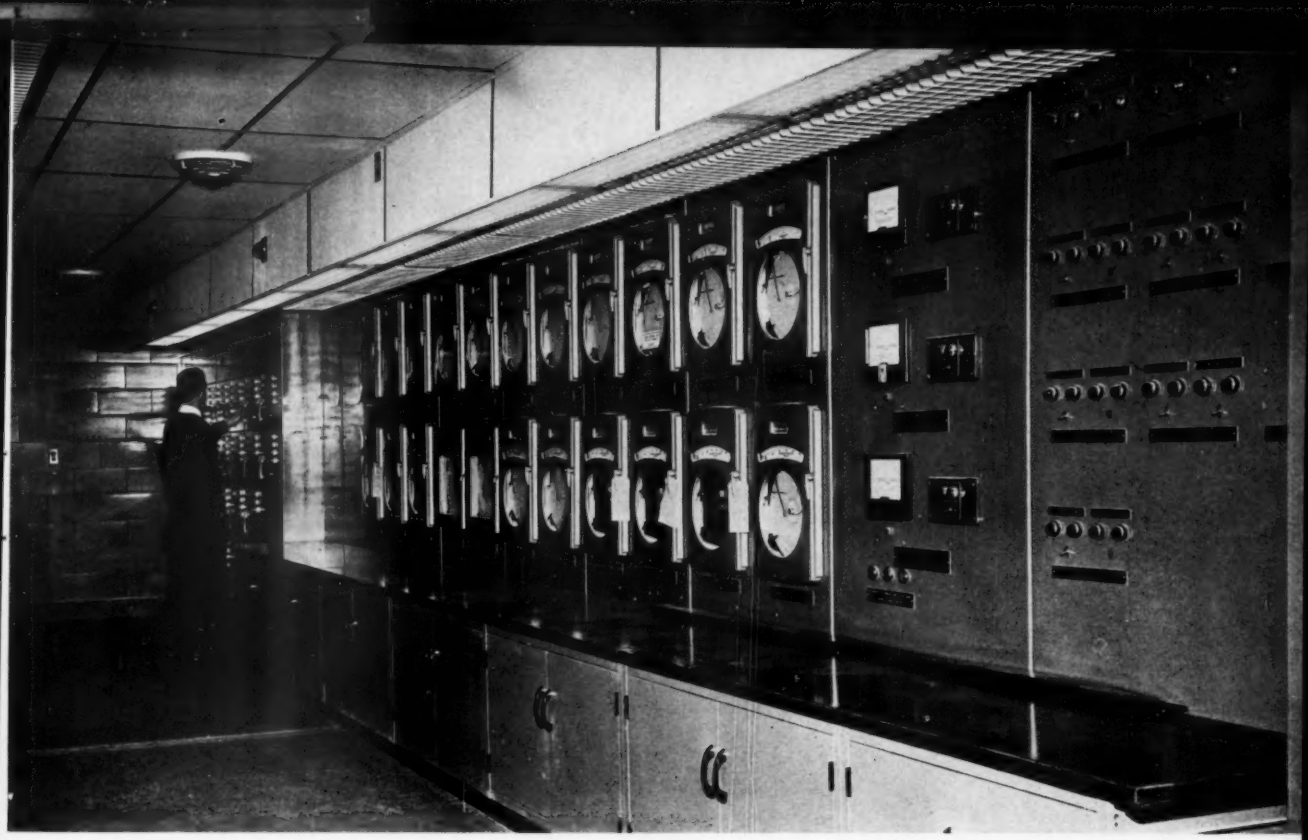


Glassed-in filters and the longest concrete filter troughs in the country (39 feet, 9 inches) are two features of Baltimore's Ashburton water-filtration plant.

Raw Water Supply

Liberty Reservoir, located on the North Branch of the Patapsco River, supplies raw water to the Ashburton Plant through 16½ miles of 10-foot-diameter tunnel. This reservoir has a capacity of 43 billion gallons at water stage 420, the elevation of the crest of Liberty Dam. Gravity flow through the tunnel can be maintained at a rate of 120 mgd until the reservoir water stage reaches 382. The reservoir capacity at this elevation is 16 billion gallons. Thus 62.7% of the reservoir capacity is available by gravity.

Provision has been made for the installation of four raw water pumps, each with a nominal capacity of 60



This modern control panel permits the operator to "see" what is taking place throughout the plant.

mgd. These pumps when installed and activated at a rate of 120 mgd, will make available the water stored in Liberty Reservoir between water stages 382 and 332. This represents an additional 14 billion gallons, or 32.5% of the reservoir capacity. The center line elevation of the lowest gate in the reservoir control tower is 320.

Plant Design

Raw water enters the Ashburton Plant through four pairs of 30-inch cone valves. These valves, furnished by the Chapman Valve Manufacturing Company, are hydraulically operated, one of each pair being used for throttling and the other for complete shut-off. After passing through the control valves, pump well, and a Builders Iron Foundry venturi meter, the water enters the mixing basin. This basin is divided into two sections and is provided with a bypass so that the water can be channeled through one or both of these basins, or bypass them entirely. The basins provide a detention period of about 10 minutes.

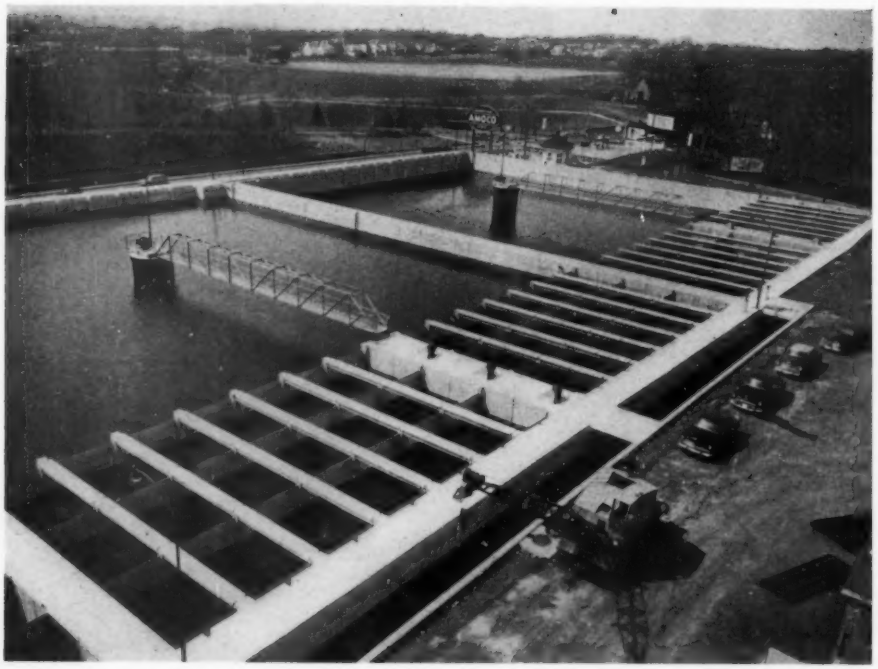
From here the water passes through a series of Link-Belt flocculators, and then through sedimentation basins 230 feet by 180 feet in size. The first 50 feet forms the flocculation portion of the basins and is provided with three rows of flocculators. This section has a detention period of approximately 45 minutes. Sedimentation takes place in the balance of the basin during a detention period of approximately 3.6 hours, based on a flow of 120 mgd. Each basin is equipped with a Link-Belt sludge removing mechanism with extension arms so that the corners, as well as the circular part of the basin, are kept clean.

Next, the water is channeled to the filters. Each of the 20 units has an area of 2106.8 square feet with a capacity of 6 mgd based on a rate of 2 gallons per square foot per minute. The filter bottoms are of the compound duplex tile type as manufactured by the F. B. Leopold Company and are covered with 10 inches of gravel, varying in size from 1-inch to #14 mesh, and 24 inches of sand. The effective size of the sand is between 0.50 mm and 0.60 mm with a uniform coefficient of from 1.35 to 1.40. The effluent from the filters is channeled to a clear well under the filters and then to either Lake Ashburton on the west or to Guilford Reservoir on the east, or to both. These reservoirs provide a gravity supply to the second zone and will eliminate the need for pumping as is practiced at present. Pumping to more elevated zones of service will definitely continue to be necessary.

The chlorinating equipment is installed so that the chlorine solution can be applied to the raw water as it enters the plant, to the mixing basin, and also to the filtered water in either of the conduits leading to Ashburton and Guilford. Liquid chlorine is first vaporized by three Model VEO Evaporizers and then added to the water by three Chlorinizers having a maximum rate of 6,000 pounds and a minimum of 100 pounds per day. These units were furnished by BIF Industries, Inc. The chlorine tanks are placed on Howe Mechanoprint Scales equipped with automatic printing as well as weight indicators. Also installed, were three Wallace & Tiernan Type A-582 residual chlorine recorders and one Beckman Model X Glass Electrode pH Meter with a Bristol Recorder for pH indication.

Chemical Feed Equipment

The liquid alum used for coagulation will be supplied by either the manufacturing plant at Montebello Filters or a local manufacturer, and will be hauled by tank truck to the Ashburton Plant. Two Nagle Industrial pumps of 120-gpm capacity and driven by 5-hp Fairbanks-Morse motors will pump the alum to six storage tanks having a capacity of 18,000 gallons each. From the storage tanks



The combination mixing and sedimentation basins provide a total detention time of approximately 4.4 hours at design flows.

the solution is gravity fed to the raw water entering the plant and is metered by Fischer & Porter Rotometers.

While carbon has not been used in treating Baltimore City water for a number of years, equipment has been provided for this treatment in case of necessity. One Omega Model I loss-of-weight gravometric feeder, having a capacity varying from 3.6 to 3,600 pounds per hour, and a storage hopper with a capacity of 1,500 pounds will provide carbon as needed. An Omega Model OF-800 dust collector is also installed with this equipment.

Algae Control

Due to the large size of the existing Ashburton Reservoir, it has been impossible to maintain in it a chlorine residual high enough to prevent the growth of algae. To aid in algae control an Omega Size 3 Universal Feeder was installed to handle copper sulfate. This feeder is equipped with a 200-pound-capacity hopper and is mounted on a Fairbanks-Morse scale.

Pebble lime will be used to adjust the pH of the filtered water. Trucks will deliver the lime to the plant and dump it into a hopper. From here it can either pass through a Sturtevant Rotary Crusher or through a Link-Belt feeder directly into a pneumatic conveyor. The Airveyor, manufactured by the Fuller Company, is actuated by a Roots-Connersville type PCP rotary positive blower. Link-Belt conveyors carry the lime from the collector to either of four 50-ton storage bins. An Omega lime feeder and slaker is installed under each of the storage bins.

These slakers have a capacity of 500 pounds per hour and are of the gravometric belt type. Each slaker is provided with a dust and vapor removal unit, and in order to provide the proper slaking temperature, a mixing valve is installed so that hot and cold water can be provided to secure the best slaking temperature. The resulting lime slurry can either be fed into the filtered water for pH control, or to the incoming raw water if such becomes necessary.

Fluosilicic acid will be used for introducing fluorine into the filtered water. Two rubber-lined tanks are provided for the storage of this acid and one Proportioneers Model 2-47 pump, having a capacity of 30 gallons per hour, will be used for handling this acid.

Glass-Enclosed Filters

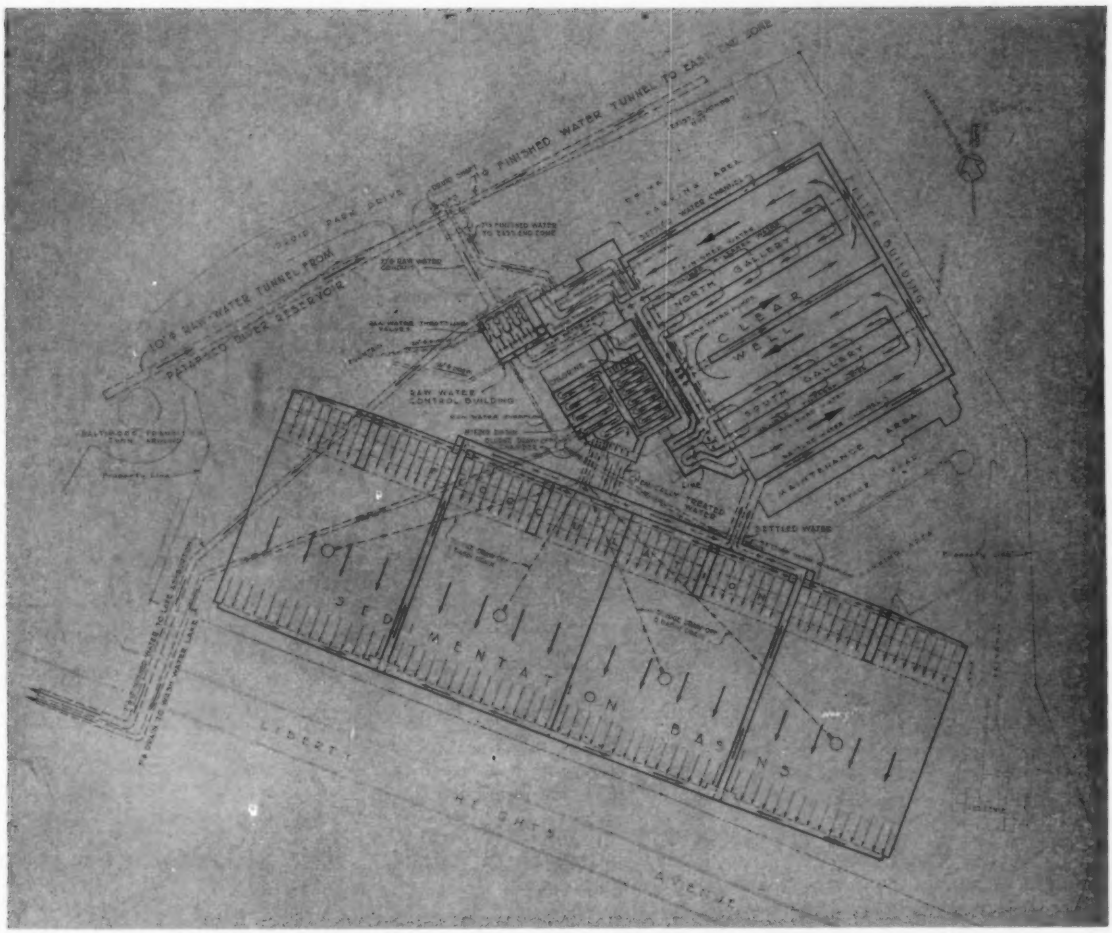
Glass partitions separate the filter operating galleries from the filters. Ventilation is provided to remove any accumulation of chlorinous fumes from over the filters. This arrangement not only makes working conditions much more pleasant, but also saves considerably on the heating costs and eliminates the damage to the equipment by these fumes.

Filter Tables

The filter operating tables are of stainless steel with marble tops. The 4-way valves were furnished by Infilco and the control and indicating equipment by the Builders Iron Foundry. A combination wash water tank level gauge and rate of flow indicator is provided in each gallery. All filters are equipped with Palmer surface-wash units. Cone valves were used in the wash water lines and gate valves for all other purposes.

Worthington vertical turbine-type pumps rated at 2,700 gpm supply water for filter washing. These units are driven by 60-hp General Electric motors. One Worthington vertical turbine-type booster pump, driven by a 50-hp General Electric motor, will provide pressure water in case of failure of the outside source.

Facilities for efficient and economical operation and control have not been forgotten at the Ashburton plant. The control panel room, with connections to all meters and indicating equipment located throughout the plant, permits operation of the



A compact design as shown by the above flow diagram was necessary because of the limited space available.

plant with the least amount of effort.

BIF Chronoflow-type instruments will record the storage levels of liquid chemical, wash water and finished water reservoirs, flow rates from the various reservoirs, rate of feed of dry chemicals, pH, pressures and similar data. A Fischer Porter instrument will record the alum feed rate and chlorine residual of the filtered water, and the two reservoirs will be shown by Wallace & Tiernan indicators. Various alarms will also help the operator in his work.

Small sampling pumps furnish water directly to the well-equipped laboratory and to the various testing equipment. This will eliminate the collection of water samples by operating personnel. A sight well is provided in the main lobby for the observation of filtered water.

The entire plant is landscaped and a display fountain, 50 feet in diameter, is located at the northwest corner in front of the entrance. The water supplying this fountain is untreated and will be recirculated. Three plaques form part of the building facade at the main entrance. The plaques, created by R. McGill Mackall, depict three stages of a water system: source, purification, and distribution.

The visitor, on entering the building, will see an indoor garden on his left and two colored murals on his right. (See cover picture and page 112.) The filters are located on both sides of a central corridor and are visible through glass panels. Ample use has been made of glazed tile, glass, and other decorative materials.

The Ashburton Filtration Plant is operated by the Bureau of Water Supply, Bernard L. Werner, water engineer, under the Department of Public Works. George A. Carter is Director of Public Works for the City of Baltimore.

Planning Board Makes Aerial Survey

THE Smithtown, N. Y., Planning Board recently took to the air for a better understanding of the township's planning problems. The seven-member board flew in a private plane in order to make a special aerial survey of the over-all topography of the town, the existing housing developments, and the road patterns.

The Board members studied several sites being considered for a heliport, and sought out natural areas which might be established as "green areas" in Smithtown under a newly enacted town ordinance.

No more traffic on this parkway exit, ruled Mayor McConnell.

Watch Out for Highway Authorities!

A city official recounts his troubles when dealing with an autonomous highway authority building a parkway through his city

By ARTHUR T. BROKAW
City Engineer
East Orange, N. J.

EARLY last year East Orange made headlines in the big New York City papers in its head-on battle with the Garden State Parkway. On January 4, Mayor William M. McConnell ordered us to seal off the parkway exits in East Orange, using city trucks. The thousands of inconvenienced motorists expressed understandable annoyance by this action. However, Mayor McConnell had very little alternative. The progress in construction at that point was endangering the people of East Orange and he had a sworn obligation to protect them.

This bold step had the added effect of showing that the New Jersey Highway Authority and the municipalities through which it was constructing the Garden State Parkway were not always on the best of terms. East Orange was only one of many communities experiencing troubles during this construction.

An analysis of these troubles must be constructive. Certainly the Garden State Parkway provides a commendable service to the traveling public. With the proper attention to detail, it should also become a major improvement to the cities through which it passes. It can and should be a logical part of urban development. We need better understanding between all such authorities and the local governmental units through which they build their projects. Their work affects all portions of local government from the office of Mayor to the department of sewers.

The principal difficulty appears to lie in the almost total lack of responsibility that these authorities have to the people it serves. In theory, an authority such as this is a state organization, owned by the people of the state. In practice, the people have no such relationship. Actually, it is an autonomous group charged

Councilman D. F. Macard also was on hand to show that East Orange was united in its decision.

with the performance of a task in a way that is financially self-supporting. Constructive cooperation with local areas appears to be a minor consideration. This lack of responsibility caused our trouble in East Orange. Let us take some well-known advice and look at the record.

This record shows clearly the lack of construction planning. Uncertainty about right-of-way caused by lack of detailed plans in advance of construction caused our people no end of trouble. Because plans continually lagged behind construction, we on the local level were unable to determine what was being constructed and how it would affect local utilities and services.

This fact, linked with the tight construction schedule, resulted in unnecessary destruction and damage to sewers, water mains, streets, curbs, sidewalks, communications, street lights, and private properties. The speed of construction coupled with what we feel was improper or incomplete inspection, produced excessive construction costs and in some cases poor quality.

Better construction planning would have provided smoother coordination between prime and subcontractors. Difficulty on this score was made very clear to us recently when, after a street-lighting system had been in place for months, it was rendered inoperative by later work of fencing and street repair contractors.

Decorative railings like this, adequate in rural areas without pedestrian traffic, are no protection either to children or adults in East Orange, N. J.

Bad Safety Precautions

More important on the record were the safety precautions that we found casually violated. Contractors constantly neglected or refused to use proper and sufficient warning lights, signals, flares, signs, and barricades. They frequently allowed raw sewage to flow in open trenches, in streets, and in large open pools. The public made constant calls on our Water and Sewer Department maintenance men to remove this collected water. However, because the contractors were working on property owned by an independent state authority, the city found itself powerless to enforce local ordinances, unless the contractor was actually operating on city streets. The Authority's contract documents contain many safety provisions, but the Authority itself took no real action to support any of them.

The design of bridges was another difficult part of the record. From the first time we had an opportunity to see the drawings, we objected to the inadequate safety provided by the railings. The railings used are decorative and adequate in rural areas with virtually no pedestrian traffic. But they present a constant and tragic danger point in urban areas where lively youngsters will use the bridges. Despite our protests, the Authority proceeded, without discussion, to construct as designed.

The lack of chain-link fencing was the cause of more concern and the real spark that ignited the East Orange "revolt." In urban areas, good, sturdy chain-link fencing must be supplied to keep pedestrians out of the right-of-way and from crossing these heavily traveled roadways. But our protests were in vain. The Authority would not, under any circumstances, heed the warnings of the local municipalities.

Only after East Orange refused to allow a city street to be removed from the Parkway right-of-way, did the chairman of the Authority visit the city and agree to forward this problem of railings and fencing to the New Jersey State Safety Council. Before this organization had delivered its reports, the Authority began extending this unprotected parkway further into the city, and it was at this point that the mayor took his very firm stand. The ap-

Snow fence on the railings may not be beautiful, but it provides protection.

parent wisdom of the mayor's decision was shown when the New Jersey State Safety Council delivered its report shortly thereafter. In it, the Council unqualifiedly recommended that fencing be installed along the perimeter of the Parkway right-of-way and that the bridge railings be enclosed with high fences.

The record also will note many construction details along parallel service roads left until months after completion of the parkway surface itself. In fact, my department is still compiling lists of unfinished, incomplete, and faulty items. One section in particular, created annoyance and danger for an extended period because it was left in a depressed area as the result of parkway elevations. In spite of great property damage and personal inconvenience to many citizens, it required the efforts of the mayor, city council and city engineer to produce a new contract for correction of these problems.

The record also shows confused and uncertain responsibility, both on the Parkway and along the parallel service roads. The many questions of storm drainage, sanitary sewers, street cleaning, snow removal, street lighting, traffic control, and even the naming of newly created streets, still remain to be resolved.

Officials of the Authority often complained that the poor planning and operation was due to lack of qualified personnel. This excuse is lacking in merit. Certainly the Authority would not tolerate a contractor using material of dubious quality in the parkway. How then can it excuse the use of personnel of dubious quality?

Let me not overlook another important part of the record, and pay tribute to those members of the Authority and its consulting engineers' staff who were honestly attempting to do a good and proper job. No one would question the intent of everyone involved with this important project. They could not be blamed for the short construction schedule that caused many of the problems.

However, this examination of the record, we feel, points conclusively to a fundamental weakness in Authorities. By their very nature, they tend to be autocratic organizations.

It points up, furthermore, the growing realization that the authority system should be used sparingly, and only after all other methods to accomplish the same end have been found impractical or unsound. If you, in your municipal operations, have dealings with authorities ahead of you, let the experience we had at East Orange give you fair warning.

Murals Tell the Story

The American City Cover Story

Left. **From this imposing entrance to the far corners of the plant, the visitor will be impressed with the magnitude of a modern water supply and treatment system.**

Right. **The three stages of a modern water system are illustrated by these plaques that form a permanent part of the main entrance to the Ashburton plant.**

BALTIMORE'S new Ashburton Filtration Plant does more than purify water, it tells the story of water in picture form and actual performance. From the imposing entrance to the far reaches of the plant, the visitor is impressed with the fact that water does not just come out of the faucet, but requires collection, transportation, purification, and additional transportation to reach the consumer in all parts of the city.

Three plaques located on the exterior wall at the main entrance to the building give the visitor his first briefing. Here the three stages of the water's progress to the home—source, purification, and distribution—are portrayed in simple form. Inside the plant, two large murals illustrate the story of water as it applies to the Baltimore metropolitan area.

The mural entitled "Rain, the Source of Supply" delineates the change in the water story over the years. Although the source remains the same, water is no longer used directly from the source, as typified by the pioneer drinking water from the river. Baltimore's water is first collected in reservoirs, treated, distributed, and then utilized. This is shown by the large dam in the center of the mural, the chemist, a portion of the new plant directly behind the chemist, and a view of the city with its many homes, businesses and industries. The clouds, a rainbow, and the rain completes the picture pointing out the source of supply for the river itself.

The second mural pictures Baltimore's water supply and distribution system. It shows the relative location of the collecting reservoirs, the two filtration plants, the transmission and larger distribution mains, and the various filtered water reservoirs and elevated tanks. The schematic map is completed in color to make the entire system easy to understand by the visitor.

R. McGill Mackall, noted Baltimore muralist, was engaged by the city to produce the murals and plaques. Through his work all visitors to the new Ashburton plant will have a better understanding of the problems involved in supplying a safe, palatable water to the modern city.

The new plant is operated by the Bureau of Water Supply, Bernard L. Werner, water engineer, under the Department of Public Works. George A. Carter is Director of Public Works.

"Mr. City Manager" Retires

Clarence E. Ridley—the man who personifies all the best elements in the city manager profession—retires as executive director of the International City Managers' Association

By RUSSELL E. McCLURE
City Manager, Corpus Christi, Texas, and *President, International City Managers' Association*

Clarence E. Ridley—Mr. City Manager

IF the term "Mr. City Manager" applies to any one man, that person is Clarence Ridley. He was one of the country's outstanding managers in the early 1920's, and as executive director of the International City Managers' Association for the past 27 years he has personified the highest ideals of the city manager profession. Mr. Ridley retired from his position on June 30, 1956, but his influence on the development of efficiency and integrity in American city government will never be forgotten.

In 1927, Leonard D. White, a leading authority on public administration, commented pungently that "city managers as a group are men with a narrow range of interests." At that time there were few who would take issue with Dr. White's observation. However, the ensuing years have brought sweeping changes in the philosophy and techniques of management, so that managers today are concerned with the entire gamut of community services—social as well as physical—and with the future needs and aspirations of communities as well. Mr. Ridley was in the forefront of this tremendous change in city management. To review his addresses, formal and informal, throughout the past 27 years would be to review the growth and development of the city manager plan itself.

Mr. City Manager was born in Armada, Mich., on March 14, 1891. After receiving a bachelor's degree in civil engineering at the University of Michigan in 1914, he started his career with a four-year assignment as assistant engineer of Flint, Mich. He then became city engineer and water superintendent at Port Arthur, Texas, and after two years there, went north to Columbia University in New York City for a year of graduate work in economics and public administration, receiving a master's degree in 1921.

Starts City Manager Career

There was widespread interest in the council-manager plan during the early 1920's, and it was natural that Clarence Ridley should think of a career in city management. When he became city manager of Bluefield, W. Va., in September 1921, approximately 250 cities had adopted the manager plan. At his first ICMA conference in 1923, he presented an address on public relations—a subject which was to grow in importance through the years. "It can be safely stated," he said, "that the success or failure of a city manager depends largely upon his relationship with the public." In 1924 he was elected a vice president of the ICMA for bettering city management.

In the summer of 1925 when Mr. Ridley announced his acceptance of an instructorship at Syracuse University, the Bluefield newspaper stated that "during the four years Mr. Ridley has been in Bluefield, the city has evolved from a hick town to a progressive municipality, and to the city government goes the largest part of the credit for the change."

In the Fall of 1927, after completing his work at Syracuse University for a Ph.D. in public administration, Mr. Ridley went to New York City to become staff engineer of the Institute of Public Administration. His Ph.D. thesis, entitled *Measuring Municipal Government,* was published at that time, and in 1928 when the National Committee on Municipal Standards was organized with Charles A. Beard as chairman, Mr. Ridley was selected its secretary.

Mr. City Manager continued his interest in city management as chairman of a committee on curricula of the International City Managers' Association, and at its 1928 conference, he presented a report on the extent to which universities and colleges were providing training for city management and also what the committee believed colleges and universities should do along this line.

It was also at the 1928 conference of the Association that the ICMA board decided to set up a full-time

His friendly smile reflecting an occasion he always enjoyed, Clarence Ridley is shown meeting with newly appointed city managers in California in 1955. Highly popular among the young members of the profession, Mr. Ridley viewed each new manager as an important link in the growing strength of the manager plan of municipal government.

secretariat and to enlarge the services of the Association. A committee, headed by Louis Brownlow, was appointed to make arrangements for a new location for the secretariat and to find a new director. In February 1929, Clarence Ridley was selected for the post. Later the same year, ICMA headquarters were moved from Lawrence, Kans., to a building provided by the University of Chicago, adjacent to the campus.

Spurs Start of Public Administration Service

Early in 1930, the development of measurement standards for municipal services was undertaken by the ICMA research committee. A full-time research director, accountant, and secretary were employed with a special grant from the University of Chicago and the Rosenwald Fund. In 1933, the work of the ICMA research staff was expanded into a separate organization called Public Administration Service. PAS has since become the leading organization in the United States for providing management consulting and survey services for cities.

During the early 1930's, grants from foundations permitted Clarence Ridley and his staff to undertake two projects of long-term significance to local government officials and their cities. The first was the inauguration of *The Municipal Year Book* in 1934, which has since become an authoritative source of data on significant activities and trends in American cities.

The second major project was the development of a series of eight management manuals designed for on-the-job training of city officials and employees. These books are widely used not only in individual and group in-service training in city halls but also by universities and colleges. Each of the eight courses and accompanying textbooks has been revised periodically to keep them abreast of changing conditions in municipal administration.

In addition to the development of ICMA programs and services, Mr. Ridley was active in many other ways. He served many years as vice-chairman of Public Administration Service and has been a member of its governing board since it was organized. He represented the ICMA on numerous national committees, sometimes as many as six at a time, was vice-chairman of the American Committee for International Municipal Cooperation, and was active in the City Club of Chicago. For a number of years he taught a class in public administration at the University of Chicago.

Develops Special Manager Services

Mr. Ridley's desire to help managers do a better job led the Association in 1945 to set up Management Information Service to which over 950 cities now subscribe. This service enables municipal officials to obtain immediate information and advice on a wide variety of municipal management problems. In addition, 150 special reports on various management topics have been issued as part of the service.

With the end of World War II the council-manager plan began a period of rapid growth which has continued at an average of about 75 cities per year. There are now more than 1,400 council-manager cities. This growth meant more managers to keep in touch with and more state and regional manager meetings to attend, and in recent years Director Ridley devoted up to three months a year visiting with managers at about 25 such meetings each year.

Breakfast Sessions

It was his practice at these meetings to invite managers who had been appointed during the year to have a breakfast session together. In this informal atmosphere he would invariably discuss the opportunities in the profession, and give encouragement and advice to younger managers. Typical of his talks to such groups are these words:

> Most important for you as an individual is that, the moment you became a city manager, you fell heir to your most valuable asset—the prestige of being a city manager—of belonging to a recognized and respected profession. . . . The position you hold, the salary that you command, and the career that lies before you are more than the product of your talent and the reward for your achievements. It is the heritage from the hundreds of men who, for the past 45 years, by their service, their integrity, and their joint participation in the development of techniques of municipal administration, have made the title of city manager a badge of distinction.

More than any other man, Mr. Ridley personifies the city manager

profession in the eyes of city managers, college and university teachers, municipal research bureau heads, state municipal league directors, and hundreds of other informed citizens. He has made a tremendous contribution towards instilling in managers the philosophy, attitudes, and idealism of a young and rapidly growing profession.

Inspired Younger Managers

For many city managers, the only contact with broader phases of municipal management was through attendance at state and regional meetings of managers. Mr. Ridley was on hand at these meetings to encourage them to take a broader view of their communities and, when necessary, to chastise them gently for neglecting vital parts of over-all management responsibilities. His warm personality and keen analytical mind made it easy for city managers to discuss their problems with him, and the inspiration provided by these talks gave the managers new strength and foresight to return to the vexing problems in their communities.

As a result of attending 32 ICMA annual conferences and innumerable state and regional meetings, Clarence Ridley has had personal contact with more city managers than any other person. Indicative of his long years of service is the fact that only 73 of the managers in office now were managers when he became director of ICMA in 1929.

Mr. City Manager always emphasized the ethical responsibility of managers to the community they serve. He did not believe in a contract or definite tenure of office. He steadfastly opposed certification or licensing of managers, saying that a better way to strengthen the profession is to encourage better selection and pre-entry training and to improve internship and on-the-job training. He thought that every city manager should demonstrate on his job that he can make a contribution to the sound management of his city which in turn will lead to better local government.

Clarence Ridley set high standards for himself and for those who worked with him. He always told city managers to look at all aspects of a given problem, emphasizing that problems should be considered as opportunities to do a better job.

The Job of City Manager

He encouraged managers to look ahead and plan for the future of their city. "A city must adapt and adjust itself to conditions and changes," he has said, "and the manager of a city should know what these changes are likely to be before they happen so that he can be ready for them and make constructive recommendations to the council. This is the essence of community leadership. In your job as city manager you can help mold a better city for tomorrow. This is your opportunity and your challenge."

Architect's sketch of shelter building and comfort station for Bellevue Hill Park in Cincinnati.

Cincinnati Pioneers Unique Park Building

DRAMATIC styling in park shelter buildings has been achieved in Cincinnati's new Bellevue Hill Park. Its unique shelter building consists of a series of mushroom-shaped pergolas, which include a concession stand, rest rooms for men and women, plus covered areas to provide refuge in times of sudden rain storms. Erected on the crest of a hill, the building affords an interesting view of the Cincinnati area.

Designed by Cincinnati architect R. Carl Freund, A.I.A., it cost $57,180. The Bellevue Hill Park was developed as part of a capital improvements program started by the Cincinnati Park Board in 1952. Work on the shelter building was begun in 1953. The new park also has walks, roads, planting, a ball diamond and a lighting and water system. The Board's investment so far has totaled $183,696. Additional facilities are expected to bring the final total close to $200,000.

Since it was first conceived, the ultra-modern design of the shelter building has become a discussion topic in many university architectural courses and in a number of architectural magazines at home and abroad.

Mr. Swanson: "A positive and economical way to control remittances."

Fines Paid 6 Times Faster By Machine

By C. E. SWANSON
Clerk of the Municipal Court
Santa Monica, Calif.

CONTROLLING and accounting for fees, fines, and bail in a Municipal Court is a miscellaneous job complicated by the variety of state, county and local funds to which, by State law, its revenues must be applied.

In this court we've nailed it down by machine. Since the saving of time is a most important consideration, we may consider that end of it first:

1. Machine-made receipts are issued in 9-12 seconds, as compared with well over a minute for a handwritten receipt. We average 300 remittances a day; therefore, we save about 4 hours a day immediately. (A half-time bail clerk's assistant was relieved for other duties.)

2. A machine-printed record of the remittance of bail for forfeiture is imprinted on the reverse of the citation, together with a rubber stamp order of forfeiture. The citation itself thus becomes a docket, saving an additional 4 hours a day previously used to prepare dockets.

3. Revenue is classified and totaled automatically as receipts are issued and citations validated, which saves 3 hours a day formerly spent in sorting and listing manual receipts.

4. Filing citations by number used to take hours; they are now threaded to a docket binder in order of payment, which takes a matter of minutes.

The total time saved amounts to the equivalent of two full-time employees, despite an 18% increase in traffic cases. Even public relations have improved because of the high speed with which payments can be accepted. Long waits in line have been virtually eliminated.

As the picture at the top of this page shows, the remittance control machine is much like a large National cash register, and is made by the company of that name.

What the machine has saved for us, it will do for any court presently using pen-and-ink remittance control methods. Substitution of the ma-

FEB -7 149368 • P433747 4 — A FEB 7 1.00

Date | Receipt No. | Code | Case Number | Fine Class | Bail | Appr. Date | Amount

MUNICIPAL COURT OF SANTA MONICA JUDICIAL DISTRICT
COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

THIS ACKNOWLEDGES RECEIPT OF THE AMOUNT SHOWN ABOVE FOR THE PURPOSE INDICATED BY THE REM. CLASS NUMBER ABOVE. SEE REVERSE SIDE FOR EXPLANATION OF NUMBERS.

FEB -7 149368 • P433747 4 — A FEB 7 1.00

IMPORTANT NOTICE

KEEP THIS MISC. RECEIPT. READY REFERENCE TO THIS REMITTANCE MAY BE MADE UPON PRESENTATION OF RECEIPT. ANY ALTERATIONS OR ERASURES RENDERS RECEIPT NULL AND VOID.

C. E. SWANSON
CLERK OF MUNICIPAL COURT OF SANTA MONICA JUDICIAL DISTRICT
ROOM 107 COUNTY BUILDING
1725 MAIN STREET, SANTA MONICA, CALIFORNIA

MUNICIPAL COURT
OF SANTA MONICA JUDICIAL DISTRICT
County of Los Angeles, State of California

DOCKET

THE PEOPLE OF THE STATE OF CALIFORNIA
Versus JOHN DOE

Complaint filed charging defendant with a misdemeanor as shown herein at the time and place indicated herein. Bail having been deposited for appearance as indicated herein and defendant having failed to appear, the bail is ordered forfeited.

MERVYN A. AGGELER, Judge

FEB--7 149368 • P433747 4 — A FEB 7 1.00

As the machine (left) issues a receipt (above), it also validates the court's copy of the traffic citation (above right) and locks the amount into the correct revenue classification total. Both mailed-in and personal remittances are handled rapidly on this multitotal machine. At the end of the day, the machine prints a daily statement of receipts.

Municipal Court of Santa Monica Judicial District
DAILY STATEMENT

Period JANUARY 30, 1956 Transaction Nos. 147140 to 147552

	Item	Corrected Totals	+ or −	Adjustments	Date	Transaction Number	Number of Transactions	Symbols	Machine Totals
A	RUTH ALLEN	1,433 50	−	2.00	JAN-30	147552	480	M — A DEC	1,435.50
B	AMRE' BUCK	182 00			JAN-30	147552	45	M — B DEC	182.00
C	—	—			JAN-30	147552		M — C DEC	0.00
D	RUTH ALLEN	307 00	+	2.00	JAN-30	147552	480	M — D DEC	305.00
	Totals	1,922 50							1,922.50
1	CVC - SM - Trust	519 00	+	5.00	JAN-30	147552	61	M 1 — DEC	514.00
2	CVC - LAC - Trust	50 00			JAN-30	147552	6	M 2 — DEC	50.00
3	CVC - ½SM - Trust	—			JAN-30	147552		M 3 — DEC	0.00
4	CTO - Trust	356 00	−	5.00	JAN-30	147552	47	M 4 — DEC	361.00
5	Misc. Trust	654 00			JAN-30	147552	12	M 5 — DEC	654.00
6	Sp. Dist. Trust	34 00			JAN-30	147552	20	M 6 — DEC	34.00
7	VC 773 - Trust	63 00			JAN-30	147552	60	M 7 — DEC	63.00
8	Civil Trust	—			JAN-30	147552		M 8 — DEC	0.00
9		—			JAN-30	147552		M 9 — DEC	0.00
10	CVC - SM - Fines	92 00			JAN-30	147552	8	M—10—DEC	92.00
11	CVC - LAC - Fines	30 00			JAN-30	147552	4	M—11—DEC	30.00
12	CVC - ½SM - Fines	—			JAN-30	147552		M—12—DEC	0.00
13	CTO - Fines	15 00			JAN-30	147552	1	M—13—DEC	15.00
14	Misc. Fines	45 00			JAN-30	147552	3	M—14—DEC	45.00
15	Sp. Dist. Fines	—			JAN-30	147552		M—15—DEC	0.00
16	VC 773 - Fines	12 00			JAN-30	147552	10	M—16—DEC	12.00
17	Salary Fund	40 50			JAN-30	147552	10	M—17—DEC	40.50
18	Law Library Fund	12 00			JAN-30	147552	6	M—18—DEC	12.00
	Totals	1,922 50							1,922.50

Description of Error	Trans. Number	Add to: Bail Clerk	Add to: Key	Subtract from: Key	Subtract from: Bail Clerk	Amount
P462187	147152	D			A	2.00
204561	147430		1	4		5.00

Cleared by Ethel Colton
Dated 1-30-56
Amount $ 1,922.50
Transmittal to County Treasurer by Check No. 2679
Ethel Colton
Cashier — Bookkeeper

chine-printed for the handwritten receipt immediately results in six to seven times faster service at the window. Internal control is greatly improved; alteration of machine-made records, on the receipt itself, on the citation, or on the audit tape, is practically impossible. Balancing is easier. Post audit procedure has been simplified, in that comparison of the citation with a handwritten receipt, to verify payment, is no longer necessary.

In short, all of the duplication of effort inherent in a hand system has been eliminated. Operating costs have been substantially reduced. Largely as a result of the experience of this court, seven other courts in the Los Angeles area are converting to similar procedures. Courts throughout the nation have almost identical problems; we hope that this explanation has shown that a machine system is not only feasible, but is the *only* positive and economical way to control remittances.

Deny Fire Policies to Slums, City Asks Insurors

ATLANTA, GA. has become the first city in the nation to ask insurance companies to deny fire coverage to substandard housing as a way of getting owners to improve their property. Recently, its Board of Aldermen adopted a resolution requesting insurors to make sure that every building is "reasonably suited for human habitation" before issuing a fire-protection policy.

The Board hopes that through this action Atlanta will have the help of insurance companies in getting rid of existing slums and in gaining compliance with its health, fire, safety, and building codes—and so make city life more desirable.

(Above) A Fordson diesel-powered tractor with a Sherman front-end loader helps bring streets to proper grade. (Right) In some areas, the city's Insley dragline removes unstable soil and improves drainage.

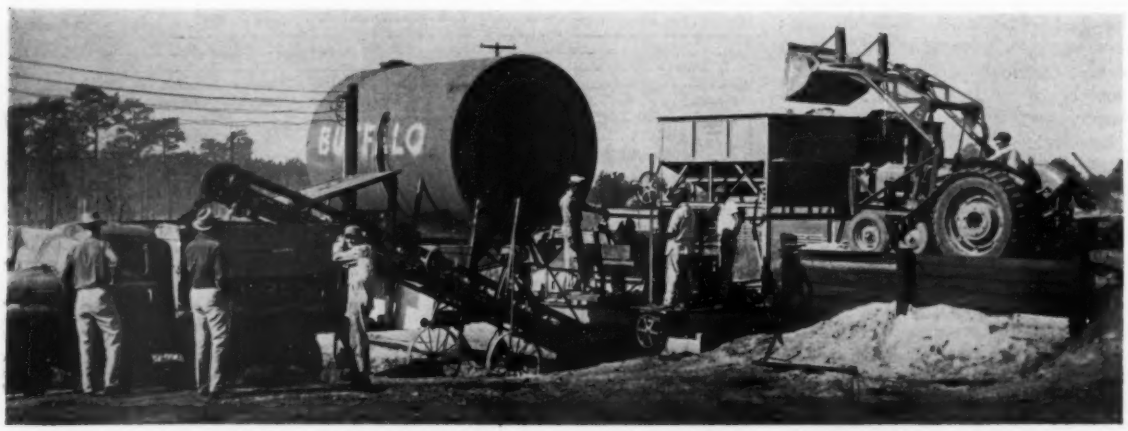
Florida-Style Street Paving OK for Georgia

Tifton, Ga., adopts practices used by its southern neighbor and lowers paving costs

By O. V. BARKULOO, JR.
City Clerk, Tifton, Ga.

THE paving season of 1956 will mark the completion of a 60-block paving program for Tifton, directed by City Engineer D. H. Hurst. The projects were distinctive for their low cost and resourceful use of native material.

During 1954, City Manager Shell E. Hartley studied the street paving techniques employed by certain Florida cities. He found that primarily they employed two systems. Since good crushed stone is scarce in



Then the Cedarapids mixing plant goes to work to supply the paving material.

Florida, these cities utilized the native sand, mixing it with emulsified asphalt. Some mix it in place on the street; while others prepare a cold, plant-mixed paving.

Uses Native Soil

Since Tifton is only 50 miles north of Florida, Mr. Hartley decided to propose to the city commissioners a cold, plant-mix method using Bitumuls AE-5 emulsified asphalt, whereby the native sand could be utilized at a savings. During 1955, the city commission approved this paving program and purchased $20,000 worth of paving equipment necessary to do the work.

The equipment purchased was a Cedarapids Model BM-1,000 Iowa bituminous pug mill; a 10,000 gallon storage tank; one Atlas model B-18, 16-inch portable belt conveyor 27 feet long; one Winslow two-compartment Binanbatch with weight batcher to properly weigh aggregate; one Fordson Major diesel tractor equipped with front-end loader and half tracks to charge the batch bins; one 1,000-gallon Rosco distributor; one Grace Model 9-A drag spreader, and one Grace Model 13-Z pneumatic-tired roller.

The city already owned one Adams road patrol, an Insley dragline, and four dump trucks. With this equipment, the city employees in the street department were able to do the street paving, resurfacing, and patching.

Paving Technique

The technique used for paving was to take advantage of the native pebble soil on most of the dirt streets in Tifton; if the streets had fine-grained, unstable soil, the crews would remove the poor soil and replace it with a minimum of 6 inches of pebble soil base.

The pneumatic rollers would then swing into action to compact this base to firm, stabilized condition, and the pressure distributor would follow closely behind to prime it with MC-1 cutback asphalt at the rate of 0.25 of a gallon per square yard. After the base was properly primed, the traffic was turned on primed streets for a testing period of approximately 30 days to determine any weak spots in the base. If the base withstood the test period, trucks then hauled the cold plant mix from the plant to the spreader. This machine placed the mix on primed streets in a layer 3 inches thick. The crews gave the surfacing several days in which to cure, and then compacted it with rubber-tired rollers. This was followed by a light application of MC-1, blotted with coarse sand.

A pneumatic-tired roller then stabilizes it to a firm, compact condition.

A Rosco distributor applies a prime coat to the stabilized street.

The Adams grader brings the street to finished grade.

Stronger, Less Costly

This type of paving provided a smoother, stronger street than had previously been constructed in Tifton, and at a much lower cost. For a 30-foot street, property owners paid $1.25 per running foot on each side of the street; and the city in turn also paid $1.25 per running foot.

To initiate a paving project, a majority of the property owners peti-

The completed street is smooth, serviceable, and easy on the pocketbook.

tioned to have the streets paved. The program is very popular; some 60 blocks were paved in the first year.

Visitors Study Program

The city is proud that the program is being inaugurated on a pay-as-you-go plan without obligation bonds against taxpayers. Many asphalt and equipment engineers have visited Tifton and studied this program. Their unanimous conclusion has been that by utilizing natural resources rather than paying the heavy freight charge for stone, Tifton is bringing about a paving program which otherwise could not have been accomplished.

Milwaukee Zoo Gets Lake for Waterfowl

A DONATION of $30,000 was made to the Milwaukee Zoo through the Ole Evinrude Foundation for the creation of a 4½-acre lake for waterfowl. The gift was one of the largest in a campaign to stock and equip Milwaukee's new zoological park.

Ole Evinrude, whose adulthood was devoted to interest in "the water and everything that lived on and around it" will have "Lake Evinrude" named in his memory.

"Lake Evinrude" will house a collection of native waterfowl, including teal, mallard, redhead, canvasback, pintail, wood and shoveler ducks; Canada, Hutchinson's blue and snow geese, and native swans. These birds will be pinioned. The collection is expected to be increased by the spring and fall stopovers of migrating waterfowl.

In the winter the water will be kept free by agitation.

This spring, construction of the lake will begin, and is expected to be completed in three years. By starting in the spring the banks can be stabilized with plant materials.

Location

The lake will be located on the west side of the 132-acre zoological park, a site now containing a pot hole. On two sides, there will be walks from which visitors can view the waterfowl in a beautiful setting. The over-all esthetics will be enhanced by having the lake level 20 feet below the adjacent land.

Ducks and geese will have one side of the lake as their private domain. This area will be overgrown with reeds and shrubs to form a nesting place in which the birds can brood undisturbed.

Part of the lake will be used to aerate and condition water for the zoo's aquarium.

The gift recalls the life of one of Milwaukee's most colorful and significant industrialists, Ole Evinrude, who was brought from Norway to a farm near Cambridge, Wis., when he was five. The farm home was near Lake Ripley, reminding him of the old country, where he used to sail his boats. His interest in the water never waned throughout his entire life.

Coins Slogan

Ole Evinrude, developer of the motorboat, adopted the motto "Don't row. Throw away your oars and use a motor." On Lake Evinrude there will not be a single motorboat.

Have You Looked at Your Zoning Law Lately?

Here is a detailed list of points to check when re-evaluating your local zoning ordinance to see if it's doing the job it ought to do

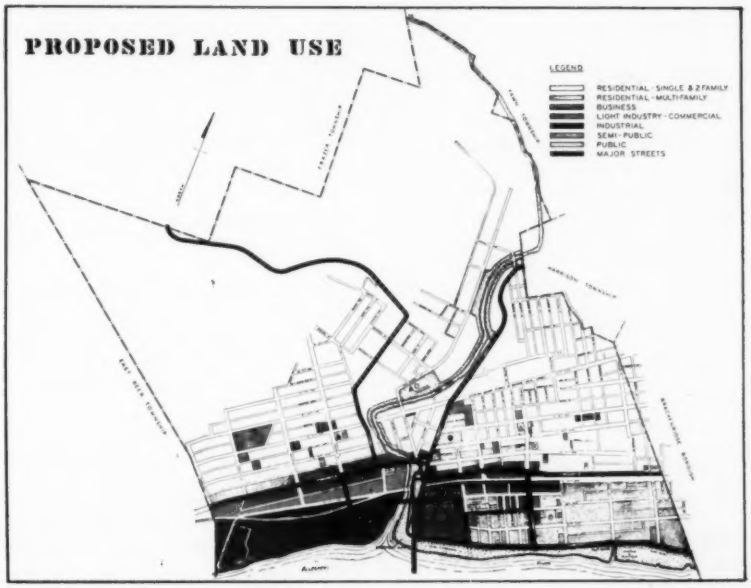
By SEYMOUR STILLMAN
City Planning Consultant
Community Housing and Planning Associates
New York, N. Y.

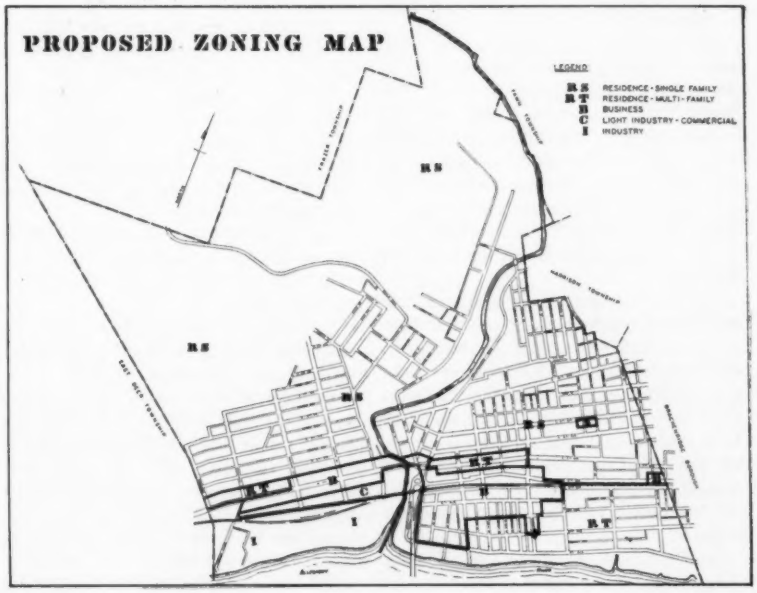
X-VILLE'S zoning ordinance will celebrate its 30th birthday this month. But, unlike good wine, this oldster ordinance has lost, rather than improved, its quality through aging.

Though 30 years have brought many changes and improvements to X-ville, the old ordinance has soured. The town's population has tripled; business has expanded westward beyond Main Street to Maple Avenue, where only 15 years ago some of X-ville's stateliest homes had stood. The trolley lines have given way to buses, and next month even the buses will stop running because everyone uses private cars now. Through all the changes, however, the old ordinance didn't improve.

Despite expedient provisions that were grafted from time to time onto the tissue-weak pages of the original ordinance, the law is pitifully unprepared to cope with today's urban problems, let alone guide the physical growtn that is expected to occur in X-ville in the next 20 years. The ordinance continues to be a negative device. (What do we keep out?)

To all intents, industry is prohibited from entering X-ville. It is difficult to interpret the law in any other way, since the only available sites are small, and they are located in





A municipal zoning map and ordinance should carry out the land use policies set forth in a master plan. (Above) The proposed land use plan for Tarentum, Pa., and (below) the zoning map that carries out the land use plan.

a swampy, partially built-up manufacturing area which is hardly attractive to modern industrialists. (In contrast, X-ville's neighboring municipalities have zoned extensive rural areas bordering major highways for modern one-story plants on lots of at least 10 acres.)

The statute and map are both so outmoded, cumbersome, and fragmentary, that local builders, lawyers, and even town officials find them difficult, if not impossible, to follow. Today, zoning in X-ville is an anachronism, and the town's residents are catching on fast.

Master Plan Up to Date

Perhaps the most curious thing about the whole situation is that the town has recently completed an up-to-date master plan. The plan presents a well-documented analysis of the community's present situation, estimates its future growth potential, and lists an excellent series of land use policy recommendations, including a carefully delineated future land use plan.

But it is evident to many people in X-ville that by divorcing zoning from planning, in having a modern plan but an old zoning ordinance, this 30,000 person community is heading into real trouble in the future. Over the next 20 years, millions of dollars will be spent for new buildings and on repairs, additions, and alterations for older buildings. This will be quite an investment for private enterprise, and it will be doubly important to the city's fiscal footing, particularly in view of this continued rapid expansion of school enrollments predicted in the plan.

The quality of the new building and rebuilding which will come can be influenced properly only by the right kind of zoning rules and administration. It's doubtful that the top-grade housing developments will be attracted to X-ville in the next 10 years in the face of lot restrictions which call for no larger than 7,500-square-foot lots anywhere in town.

It is obvious that X-ville's zoning ordinance needs a complete re-evaluation and a thorough rewriting in line with the town's master plan recommendations. Thus, in the hope that someone in X-ville will pick up this article and put it in the hands of the right official, I suggest that the following points be considered in re-evaluating the town's zoning regulations:

1. The state's Municipal Zoning Enabling Act is worth restudying to serve as a reminder of the reasons for and statutory basis of zoning regulations. In New York the Act will have this paragraph:

> Purposes of zoning. Such regulations shall be in accordance with a comprehensive plan and designed for one or more of the following purposes: to lessen congestion in the streets; secure safety from fire, panic and other dangers; promote health, morals or the general welfare; provide adequate light and air; prevent the overcrowding of land or buildings; avoid undue concentration of population. Such regulations shall be made with reasonable consideration, among other things, to the character of the district and its peculiar suitability for particular uses, and with a view of conserving the value of property and encouraging the most appropriate use of land throughout such municipality.

2. The ***zoning map*** should be redrawn with an eye to:

> (a) Making it conform to the master plan, thus creating a legal instrument for carrying out major portions of that plan
>
> (b) Correcting the hodge-podge of spot zoning changes and unrealistic districting of the past
>
> (c) Protecting all zones
>
> (d) Using transition or buffer zones as protective devices
>
> (e) Reconstituting the business and industrial districts in line with experience and modern building techniques.

3. The ***zoning ordinance*** should be reorganized in order to:

> (a) Simplify and clarify its structure so that it may serve the public and officials more conveniently and efficiently
>
> (b) Institute provisions not now included, in keeping with present-day knowledge, standards and judicial decisions
>
> (c) Regulate development, reconditioning and redevelopment in accordance with sound and flexible principles of density, coverage and design, to allow greater freedom and imagination of site planning, building types and combination of uses
>
> (d) Insert such modern zoning methods as conditional use regulations, floor area ratio provisions, techniques for planned unit development, etc.
>
> (e) Authorize certain primary uses now permitted freely in residential (or other) districts only by specified conditions set in the code and after investigation and study by the Board of Adjustment and Planning Board. (For example, institutions, public buildings, churches, clinics, research facilities, private schools, etc., ought to be properly located in an area and on a site, even when allowable in a zone, without recourse to amendments.)
>
> (f) Streamline the text by providing a summary schedule or chart, outlining its regulations by districts.

4. The ***zoning districts*** might well be realigned to meet land use requirements:

> (a) Business zones need differentiation, such as neighborhood shopping, community shopping, general commercial, central business and commercial-industrial. Each demands varying controls and regulations.
>
> (b) Industrial zones require more careful break-downs and delineations, with sets of standards based more on performance than listings of uses or categories of industry.
>
> (c) "Flexibility" provisions appear desirable to permit large-scale development in residential, business or industrial categories. Controls based on design, density and bulk of volume might, in such cases, be more favorable than the routine usually applied.

5. ***Residential zones*** ought to be reappraised with the objectives of:

> (a) Creating several multiple residence districts, with several degrees of density, height, coverage and open space requirements
>
> (b) Re-organizing moderate and low density zones
>
> (c) Regulating conversions and rooming houses by specific measures, procedures, and standards; excluding boarding houses from certain residential districts permitting strictly governed conversions of dwelling structures only in certain districts, with rules regarding number of units, size, lot area per family, relation to adjoining and neighborhood uses, etc.
>
> (d) Barring residences from all industrial districts.

6. ***Nonconforming uses*** ought to be tackled seriously since in many aspects these are injurious or a threat to home sections and often lead to downgrading of neighborhoods.

> (a) Provisions for elimination of nonconforming uses might be installed with carefully considered and equitable time limits for the amortization of various uses and structures subject to termination and conformance
>
> (b) Closer liaison by official (legal) action ought to be instituted between the planning board and the board of adjustment to prevent variances which effect or perpetuate spot, undesirable uses
>
> (c) Amendments to the new ordinance should be carefully analyzed in order to maintain the spirit of comprehensive zoning
>
> (d) Use variances should be referred to the planning board for study and recommendations before any final disposition of cases. The application of over-all planning is vital in order to curtail and eliminate unwise variances and what is, in effect, spot zoning.

7. ***Commercial zones*** ought to be re-

examined and reevaluated in order to:

(a) Recognize the relation between business and residence, in order to afford mutual protection, to eliminate blight factors and unsightly development, and to encourage and safeguard proper building ventures

(b) Concentrate shopping areas for neighborhood conservation, coordinate design, proper functioning, and prevention of strip, haphazard, and scattered development which contributes to or underlies blight and marginal operation

(c) Consider parking needs for varied types of business areas

(d) Provide adequate but not an overabundance of commercial areas.

8. ***Zoning at the city's limits*** needs special attention. Cooperation with neighboring municipalities for land use controls at the boundaries is necessary if effective and consistent regional patterns are to be established. Mutual planning and understanding of zoning and development goals can be beneficial to all concerned.

9. ***Parking and loading*** provisions should be drawn up thoughtfully, since these aspects are so closely tied to traffic, public safety and welfare, and land use needs. Modern techniques and standards should be applied.

10. ***Board of Adjustment.*** This board is often the key to zoning in practice. Misunderstanding of the functions and failure to carry out its duties properly, destroy the best zoning law. For more effective administration of zoning, in order that decisions are in keeping with the purposes of the master plan and long-range land use policies of the planning board, and to eliminate unwise or harmful variances, certain desirable practices are recommended:

(a) The granting of variance ought to be in harmony with the intent and spirit of planning and zoning. Thus decisions must not impair or change the character of the district, must not be injurious to the neighborhood, or otherwise run counter to the public welfare.

(b) The adjustment board should describe fully in its findings the special and unique conditions and circumstances which make the strict application of an ordinance's provisions a deprivation of reasonable use of such lot or structure.

(c) The adjustment board should transmit to the planning board copies of applications or appeals for variances, particularly when use is in question, before public hearing and action thereon, for the planning board's report and advisory opinion. The planning agency ought to be in a position to express its opinions, based on the total city situation, prior to binding decisions. The planning board is the suitable advisory agent for this important area of zoning action and the best interests of the city would be served by such considered counsel.

Planning Boom in New Jersey

MUNICIPAL planning is prospering in the State of New Jersey. according to figures released for January 1956 by the State Bureau of Planning, 388 (68% of New Jersey's 567 municipalities now have zoning ordinances; 356 (63%) of the municipalities have official planning boards; 257 communities have instituted subdivision controls, while 122 master plans have already been completed.

The Bureau is in the process of completing its 1956 survey, and according to all indications, municipal planning in New Jersey will continue to grow.

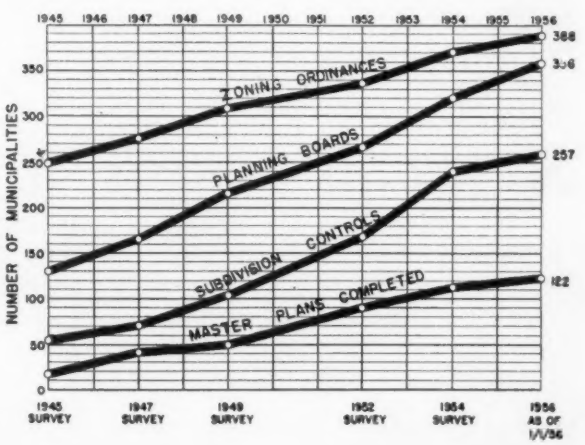
In line with this progress report, the New Jersey Department of Conservation and Economic Development recently announced that funds totaling $141,200 have been made available to aid the development of 10 community plans in nine counties of New Jersey. One-half of the money is provided under the federal Urban Planning Assistance Program enacted under Title VII of the National Housing Act of 1954. The remainder is provided by the state and the 10 municipalities involved. New Jersey is the eighth state to participate in the program.

The project for developing the 10 plans is being directed by B. Budd Chavooshian, new Chief of the Bureau of Planning in the Department of Conservation and Economic Development. As supervisor, Mr. Chavooshian will work closely with technically qualified planners to develop the master plans. The 18-month program will include the preparation of base maps; studies of present land uses for industry, residence, commerce and other purposes; plans for zoning, traffic, slum clearance, and other developments.

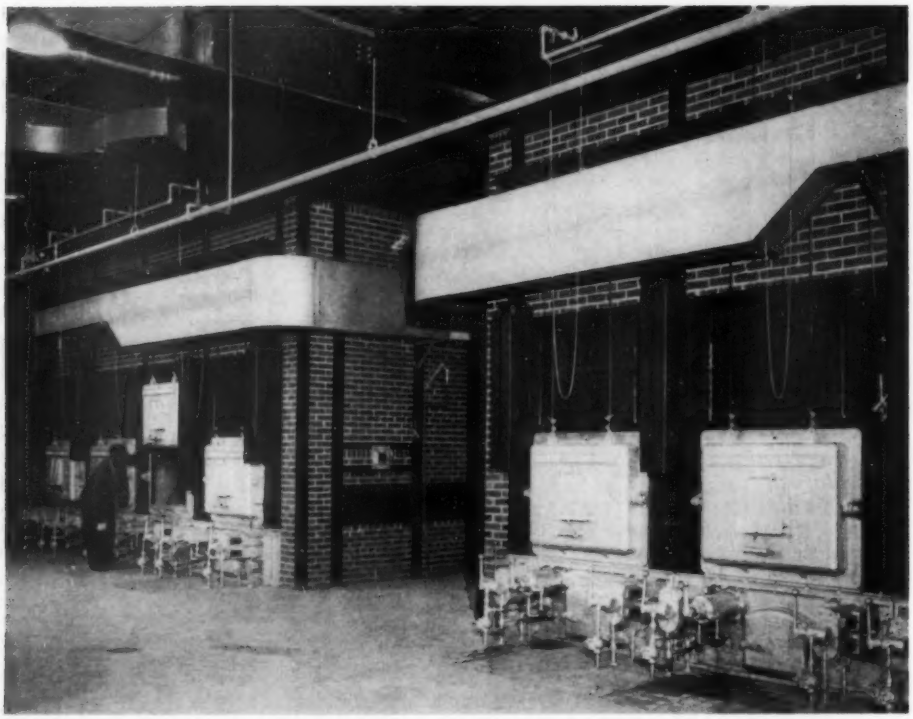
Other New Jersey communities will become eligible for planning assistance when the program is expanded or extended. The principal requirement for qualification is that the community have an urgent and particular planning problem and be unable to develop a master plan without assistance.

A planner with broad, practical experience, Mr. Chavoosian had been director of Trenton's redevelopment program before assuming his new duties. In less than two years on the job he secured federal approval for the Coalport project to be developed for industrial use, and also helped to launch the John Fitch Way project, aimed at beautifying Trenton's riverfront area.

New Jersey's new planning chief feels that the state's planning activities have wide potentials, particularly in view of its participation in the federal community planning assistance program.



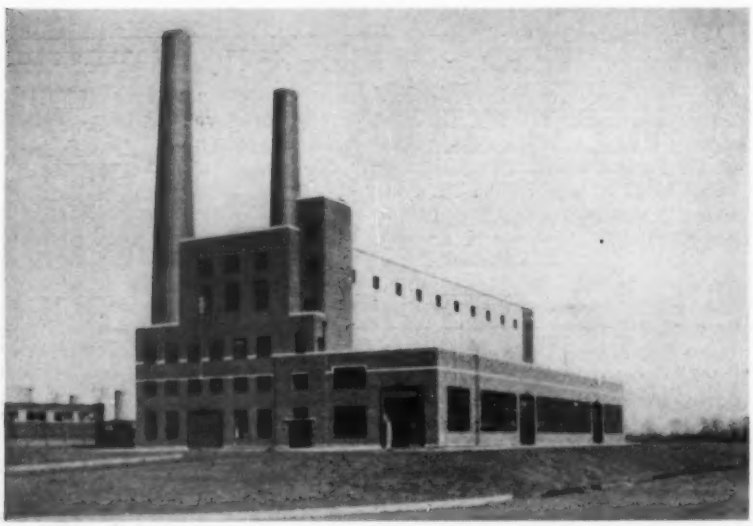
Trends in municipal planning activities in 567 New Jersey municipalities from 1945-56.



Installation of Flynn & Emrich hydraulically operated stokers has greatly increased furnace capacity.

St. Louis Turns to Incineration

Unusual furnace construction and use of mechanical stokers reduce maintenance cost and increase furnace capacity



South Side incinerator burns about 370 tons of refuse per day; in summer, over 400.

By FRANK J. McDEVITT
President
Board of Public Service
St. Louis, Mo.

THERE are many reasons why a city assumes the task of refuse collection and disposal, but usually one reason gives impetus to the adoption of such a program. In St. Louis it was smoke.

Prior to 1950 residents of St. Louis had to dispose of their own refuse (not garbage) and this was done through private haulers or by burning it in open incinerators or rear-yard fire places. Burning was the cheapest—and therefore the most popular method of disposal—as long as one discounted the effect of smoke

and soot on buildings, furnishings, and the surrounding landscape.

Citizens and city officials recognized the need for air pollution control, but also recognized that such a clean-up program necessitated an improvement in refuse-disposal methods. Consequently it was smoke, or the problem of eliminating smoke from the St. Louis scene that led city officials to the adoption of a municipal refuse-collection and disposal program.

In 1948 an ordinance was enacted that prohibited the burning of refuse except in properly designed incinerators. Actual enforcement of the new ordinance followed about a year later after delivery of sufficient equipment to permit weekly collection. To properly coordinate the work, the city was divided into a north section and a south section. These sections were then divided into smaller collection districts. In this way, haul distances to the various disposal sites were kept at a minimum.

Right.
The numerous bays along the storage pit permit several trucks to unload at the same time.

Left.
Two Milwaukee Cranes transfer the refuse from the pit to the furnace charging hoppers.

Disposal Methods

Landfill and open dump operations were adopted as the most economical means of disposal. However, after several years of operation it became apparent that suitable disposal sites would soon become difficult if not impossible to obtain. Thus, incineration entered the picture. The South Side incinerator was placed into operation late in 1954 and a duplicate unit is now under construction at the North Side disposal site. At present all combustible refuse collected in the south section is disposed of by incineration and similar material collected in the north section is hauled to a landfill area.

Old Plans Revised

Incineration was considered as far back as 1946 when the firm of Greeley & Hansen, engineers of Chicago, were engaged by the city to prepare plans and specifications for two duplicate incinerators. However, the city was not in a position to proceed with the work immediately, so paid the agreed upon fee and filed the plans.

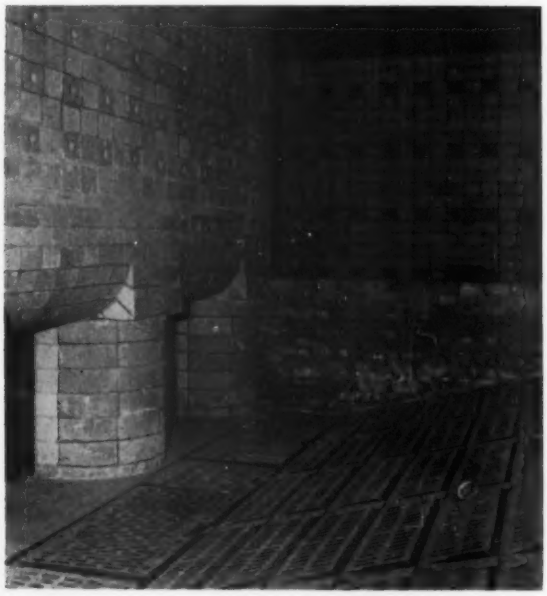
The city, after the new administration took over in 1949, carefully reviewed these plans and decided that certain improvements could be made. The original plans called for four furnaces with hand-stoked grates, solid walls in the breeching and expansion chambers, and manual cleaning of the breeching and expansion chambers. It was felt that forced draft stokers would be a distinct improvement and so the firm of Flynn and Emrich Co., of Baltimore, Md., was contacted. We also contacted Laclede-Christy and decided on air-cooled walls of sectional construction. Finally, the city decided on the use of a hydraulic vacuum system of fly-ash removal instead of the hand method.

The city did not have sufficient engineering personnel to proceed with the contemplated changes, so again engaged Greeley & Hansen to check the manufacturer's drawings and revise the original drawings to include the new equipment. The plans were revised and the South Side incinerator was constructed in 1954.

Although actual tests have not been made to determine the capacity of the furnaces, the units have exceeded the 100-ton design capacity by as much as 70%. The original design was based on 50 pounds of refuse burned per square foot of grate area with a furnace volume of 14 cubic feet per ton.

Unusual Design

Construction of the furnaces is unusual in that the firebrick wall is separated from the exterior furnace wall by approximately 6 inches of air space. The firebrick is supported by horizontal steel beams spaced about 36 inches apart. Vertical steel columns located between the two furnace walls support the horizontal beams. Specially formed firebrick slips over the interior flange of the horizontal beams in a way that prevents exposure of the steel work to the direct heat of the furnace. Laclede-Christy Company of St. Louis supplied the refractory



The vertically and sectionally supported refractory wall allows ample expansion space not possible with solid construction.

material used for this installation.

This design has two distinct advantages over solid-wall construction. First, damaged firebrick can be replaced merely by removing the section in which the damaged brick is located, thus confining repair work to a small area. Secondly, the air that enters the space between the two walls through ports located at the bottom of the exterior red brick wall prolongs the life of both walls by reducing the temperature. This air, after being heated by its passage between the furnace walls, is conducted into the furnace and used as preheated over-fire air.

Special consideration has also been given to fly-ash removal. Most incinerators are usually shut down over the weekend, during which time the doors in the breeching and expansion chamber are left open to cool the firebrick so the fly ash can be removed by hand. This alternate heating and cooling of the firebrick causes rapid deterioration. We have tried to avoid this by putting in a hydraulic vacuum system of ash removal whereby this fly ash is picked up at various points in the base of the expansion chamber and breeching by a flexible hose. The fly ash is discharged into a sewer where it flows for a short distance to the Mississippi River. We expect to have a duplicate system at the north side incinerator, but this will probably be operated by compressed air instead of hydraulic.

Fleischer-Seeger Construction Company of St. Louis built the four furnaces. The air-operated charging gates and hydraulically-controlled ash gates were furnished by Beaumont Birch. Each furnace has its own combustion chamber, but all four units are served by one large expansion chamber.

Dampers placed at the entrance to each of the two stacks and also in the center of the expansion chamber between the stacks permit the use of one or both stacks as well as either half of the expansion chamber or the entire unit. The chamber is designed to reduce gas velocities to 7½ feet per second so that most of the fly ash will drop out before the gas enters the stacks.

The stacks, constructed by the Kellogg Company of New York, are 175 feet high and have a minimum inside diameter of 9¾ feet. The V & M Contracting Company of St. Louis erected the incinerator building.

Operation

All refuse entering the incinerator is weighed on a Howe motor truck scale equipped with a Mechanoprint weight recorder, then dumped into the storage pit. This pit runs across the back of the four furnaces; it is 165 feet long, 20 feet wide, and 20 feet deep. Two 3-to-5-ton-capacity Milwaukee overhead cranes equipped with 2½-yard Blaw Knox buckets transfer the refuse from the pit to the charging hoppers. The ashes and other noncombustibles drop from the grates into the ash hoppers for water quenching and are discharged into trucks for final disposal.

Four Buffalo Forge Company blowers, powered by 25-hp General Electric motors, provide the necessary draft for furnace operation. The motors and fans are coupled with Gyrol Fluid Drive units furnished by the American Blower Corp. These variable speed couplings have a maximum speed of 1,800 rpm and can be controlled automatically or manually.

Compressed air for various operations is supplied by two Gardner Denver Model R-8-CP Air Compressors. These units are driven by 25-hp Electric-Dynamic induction motors and operate at a pressure of 135 psi. Two sets of Racine hydraulic fluid pumps supply the necessary power to operate the Flynn & Emrich stokers and the ash doors.

A storage and repair garage is located adjacent to the incinerator. Here the collecting units are washed down, stored, repaired and maintained as needed. The close proximity of the garage to the incinerator saves considerable travel time and allows more time for collection operations.

At the present time refuse is collected by 81 White trucks equipped with Leach and Gar Wood packer-type bodies. Approximately half of the units are used to make weekly refuse collections in each of the two sections of the city.

Duplicate Installation

A second incinerator is now under construction and should be completed early in 1957. This unit will be used to dispose of all combustible refuse collected from the north section of the city. Outside of minor modifications, both units will be identical.

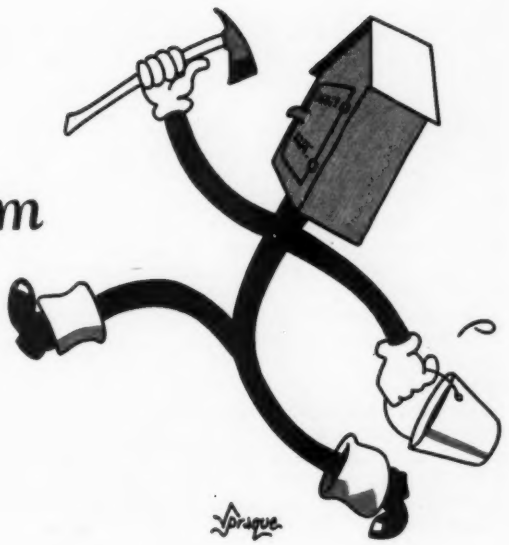
Because of the change in design from hand-fired to mechanically-stoked furnaces, minor difficulties arose. One such trouble spot occurred when water from the ash-quenching spray flowed over the grate operating cylinders. This was remedied by changing the water-quenching equipment to spray downward. The change in design has materially increased furnace capacity and the minor difficulties have been corrected or are in the process of being corrected.

The incinerator building includes the necessary locker rooms, showers, and office space. Window units provide air conditioning for the offices.

Mr. E. W. Deering, commissioner of refuse collection and disposal, is responsible for the operation of the incinerator and the refuse-collection program.

Colorado Springs' New

Telegraph Fire Alarm



Decided after a year by triangle, 9 years by bell, and 67 years by "good old reliable telegraph box"

Part I—*A short history*

By LESTER L. WILLIAMS, M. D.*

THE City of Colorado Springs marks its history from the bright and glorious typical Colorado morning of July 31, 1871, when the first stake was driven. Its farsighted founder, General William Jackson Palmer, envisioned it to be a beautiful city, with wide streets and parkways.

Five months later, the Colorado Springs Fire Company was formed, and soon a Babcock chemical engine was purchased. The first method of sounding an alarm of fire in the town was to ring the bell on the Presbyterian Church.

The Babcock engine was first called on at 1 a.m. on Saturday, October 16, 1875, at the burning of the wooden jail. The calaboose had started as a colony cabin, built of a single thickness of plank. It was the usual thing for prisoners to escape with ease the first dark night, and each time this occurred another layer of boards was nailed to the jail, until the resulting structure was many layers thick. Once well ignited, the fire in spaces between the layers was almost impossible to extinguish. It was reported that the Babcock worked fine until the original charge was exhausted, and then could not be recharged. The Hook and Ladder Company employed hooks, axes, and buckets of water, but when the fire was out they found they had torn the building down.

Three questions were raised after the fire:

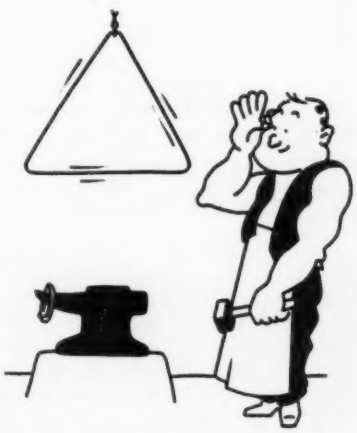
Why don't we have a bell or fire alarm?
Why isn't the Babcock always ready for service?
Who set fire to the calaboose?

In 1878 a water system was installed with 20 fire hydrants, and two hose companies were formed. As the years passed and the town grew, other hose companies were formed to protect the new sections of the town, until by 1893 the fire department consisted of eight volunteer hose companies and one hook and ladder company, all with hand-drawn equipment.

The first signal for exclusive use as a fire alarm was a 4-foot triangle, made at a blacksmith shop here at a cost of $16, and attached to the engine house, in April 1879.

The need for a better fire signal was still felt, and in the Fall of 1880 Chief John Pixley circulated a petition for funds to purchase a bell. The money was raised and the bell arrived December 28, 1880. It weighed 2,900 pounds, and a tower 30 feet high was built for it.

The city was divided into 8 districts, and it was planned that the number of the district would be rung on the bell to indicate the location of the fire. While the bell had a loud, clear tone, it was flanked by buildings of equal or greater height than its tower, so in tests it could not be heard by some observers only four blocks away. And for some years under this system, when a householder discovered a fire he had to make haste to the fire station and ring the bell to summon the fire laddies to assemble and pull their hose reels to the scene of the blaze. This took time.



On May 11, 1888, early in the

* Dr. Lester L. Williams is a prominent surgeon in Colorado Springs. He has taken a keen personal interest in the operation of the city's Fire Department and because of this has done a great amount of research into its history.

morning, fire broke out in a large house far north on Cascade Avenue. A dog wakened one of the family shortly after midnight, but attempts to telephone an alarm of fire downtown were futile, for the telephone operator was asleep. Finally, a half hour later, a boy on a bicycle rode downtown and rang the bell. Another half-hour elapsed before the fire department could respond to the distant location. As a result, damage was considerable.

In the newspaper next day, Chief Ferrin advocated installation of an electric fire alarm system. The alarm systems at nearby Denver and Pueblo were inspected, and finally a Gamewell system was installed at a cost of $2,500 and put in service August 15, 1889. Chief Ferrin issued a card of fire alarm box locations as follows:

Box 15—Streetcar barn
Box 16—Vermijo between Tejon and Cascade

Box 23—Cucharras between Weber and Wahsatch
Box 24—Platte between Tejon and Cascade
Box 32—Cheyenne and Boulder
Box 33—Nevada and Monument

In December 1890 these original six boxes were renumbered so that the first digit of the box number indicated the ward where it was located. Boxes were added slowly, and by January 1, 1891, there were 13 boxes in service. On August 4, 1891, the city council voted to purchase an indicator for use at the hose house to locate the box from which an alarm originated. In November 1891 the alarm system was rearranged so that there was one north and one south circuit, instead of the original single circuit supplying all boxes. By January 1, 1893 the system had grown to include 22 boxes and 8 miles of wire. When a box was pulled the alarm was sounded on the bell at the city hall and on the steam whistle at the electric power plant.

On February 12, 1894, a paid fire department went into service, and took over the Gamewell system of 28 fire alarm boxes. By 1896 there were 36 boxes on 5 circuits, and a $1,000 switchboard had been installed. In 1908 there were 57 boxes.

Part II—Reliability and Continuity of Service

By A. E. BURT
City Electrician
Colorado Springs, Colo.

IN 1955 when space demands in City Hall required relocation and new fire alarm equipment to provide for the growth of the city, no changes were made in our circuits or 100 boxes. New headquarters equipment of the most modern design was installed in a new alarm headquarters constructed at Fire Department headquarters. It also contains the transmitter and receiver for the Fire Department's own two-way mobile-radio system, consisting of 11 mobile sets and the main station.

The First Essential

In an emergency communication system the first essential is reliability and continuity of service. It depends on the quality of supervision and maintenance. The electricians employed by most cities are devoted to their work and have a keen sense of their responsibilities for the safety of the public. Their loyalty is not exceeded by even the uniformed firemen and policemen. Strikes among these workers are almost unheard of. On the other hand, long strikes are becoming increasingly common among the telephone workers.

When a fire is reported by telephone, wrong addresses or other wrong information is common. We use voice recorders on all alarms by telephone. A telegraph alarm box does not get excited, but simply and rapidly gives a definite location. The fire apparatus is on its way within a minute of the time the "hook is pulled." Some of the most disastrous fires have resulted from the confusion and wrong information given when an alarm is transmitted by telephone. Many people wrongly try to advise the fire department as to the extent of the fire and the equipment needed. Any fire is small to start with but may be of major proportions by the time the apparatus arrives.

It is my opinion that a city is wrong in delegating to private organizations any of its responsibilities to safeguard the lives and property of its citizens.

I do not propose that a handy telephone should be ignored in transmitting an alarm of fire. The quickest and closest means should be used.

I speak only from 33 years of service with this city on all its municipal signaling systems. The privately owned telephone systems have an important position in our life and cannot be displaced. It is also my opinion that no other known means can replace the good old reliable telegraph-type of fire alarm box for the purpose for which it is intended.

It is a pleasure to state—and Fire Chief Fred H. Lausch emphasizes it—that City Manager John M. Biery and the City Council have cooperated to the fullest in providing this city with the finest fire-fighting equipment obtainable.

Film Shows San Mateo Officials at Work

CITIZENS of San Mateo, Calif., can now observe their city government at work via a color and sound motion picture. The 28-minute film was prepared by city employees with professional help from residents. It cost $1,100, less than the cost of preparing and distributing a printed annual report. The picture was made over the period of a year in order to get a record of seasonal municipal activities as they took place. It can be used for television and for showing before "live" audiences. City employees and leaders "acted" out the film but references by name were avoided so that it would not become dated by changes in personnel. A local photographer took the pictures.

The Alma lagoon can be operated at levels of 2, 3, or 5 feet.

We Answered Our $64,000 Question

A municipality of 380 persons finds a way to build an up-to-date municipal sewerage system

By RALPH J. FISCHER
Mayor
Alma, Mo.

ALMA'S $64,000 question arose late in 1954, shortly after completion of our new water system. It came about in chain-reaction style. First, the availability of water to every building in town sparked a modernization program, particularly in homes that did not have modern plumbing facilities. This, in turn, created a sewage and industrial-waste disposal problem. The consensus was that it should be handled on a community basis; however, the solution to such a problem for a town of approximately 380 persons posed quite a financial question, especially after the expenditure of $140,000 for the water system.

As a small town, we did have one advantage over the larger city. We could present the facts to all the citizens at one mass meeting, and did so in November of 1954.

Louis Payton, district engineer of the Missouri Division of Health, who attended this meeting, strongly recommended a municipal sewer system. Shortly after the completion of the water system, the people of Alma voted a bond issue for construction of a new school. Between $4,000 and $5,000 of this money was earmarked for the school waste disposal system. Also, the Alma Creamery and the Alma Locker Plant were considering some type of treatment plant that would meet the Missouri Division of Health requirements. The funds needed for these installations would go a long way toward payment of a municipal sewer system that would serve the school and industries.

Quick Action

Our attorney, Ike Skelton of Lexington, Mo.; Mark B. Layne of Higginsville, Mo., our consulting engineer for the water system; along with Louis Payton and Paul Decker, engineers from the Missouri Division of Health, presented the situation to our citizens. When they learned that a municipal sewer system could be established with the cooperation of the industries and school district, the citizens promptly voted for a study of the problem and an engineering report to be made by Mr. Layne.

Bond Issue Required

The report, presented to the city in December 1954, recommended a lagoon disposal system. Funds for the lagoon and trunk sewers were to be derived from bond issues of $10,000 in general obligation bonds

and $38,000 in revenue bonds. An additional $14,000 was to be contributed by the school district and private concerns. Lateral sewers were to be constructed later at an estimated cost of $62,000, and assessed on the district plan.

Since condemnation proceedings were required to obtain some of the needed land, construction was delayed until September 1955. Once started, work progressed rapidly. Mr. Decker inspected and approved the lagoon and major portion of the mains in December 1955 and made the final inspection on February 7, 1956. Homeowners made connections to the line as soon as they were permitted to do so.

To meet Division of Health requirements and allow for future growth, the city acquired 21 acres of land for the lagoon disposal system. Total cost for this land was $3,877.75, including awards, court costs, and attorney fees. The site is located about a half-mile from the city.

The lagoon has a surface area of 3½ to 4 acres, and was designed on the basis of 100 persons per acre. The additional land provides sufficient room for construction of another lagoon of seven acres should the need arise. The outlet chamber and gates allow for operating levels of 2, 3, and 5 feet. Approximately 27,000 cubic yards of earth make up the berms. These berms are 7 feet high on the inside, have 4:1 slopes, and are 10 feet wide at the top. The lagoon proper is surrounded by a 6-foot-high nonclimbable fence manufactured by the Keystone Steel and Wire Company. Raw sewage enters at the bottom center of the lagoon.

The inclusion of industrial wastes from the Alma Creamery Company and the Alma Locker plant in the sewerage system influenced the design of the disposal lagoon. These wastes include spilled milk and the washings from milk cans, churns, and the creamery floors. The locker plant effluent includes blood wastes and wash water from the killing room. Both operations take place about the same time in the morning, resulting in a highly concentrated waste product.

To handle this problem, our engineer provided volume dilution at the lagoon using a 3-inch Fairbanks, Morse vertical-drive sewage pump with a nonclogging-type impeller. This unit, rated at 200 gpm, draws the purest liquid from the lagoon, usually found in the upper 6 inches of the liquid, and mixes it with the incoming sewage. Selection of the pump was based on a dilution of 4 to 1.

A Sangamo time switch and controls automatically control the pump operation in accordance with the needs for recirculation. The heavy industrial load now reaches the lagoon between the hours of 10 a.m. and 12 noon, and the timer is set to operate the recirculation pump during these hours. However, the unit can be set for any time duration or number of cycles needed to fit actual operating conditions.

The main sewers constructed as a part of this program include 2,651 feet of 12-inch pipe; 2,254 feet of 10-inch pipe, and 750 feet of 8-inch pipe. Standard and extra-strength vitrified clay pipe was used with the exception of railroad crossings. The crossings were bored and cased, using 148 feet of McWane cast-iron pipe for the sewer line. The entire system is gravity flow with sewer depths ranging from 6 feet to 23 feet.

Service Charges

The total cost of our mains and lagoon, including land, right-of-way, interest during construction, engineering, legal, construction costs, and miscellaneous was $64,270.49. With the completion of the laterals, the system will be valued between $125,000 and $130,000.

Funds for operation, maintenance, and revenue bond retirement are derived from a monthly service charge of $2 for residences and $3 for commercial establishments. Because of their original contribution to the system, the creamery, locker plant, and school are charged the regular business rate of $3 per month. We also have a $5 connection and permit charge plus a $3 inspection fee. This money also goes to the sewer fund. Farming of the lagoon grounds until it is needed for future expansion will also provide some additional revenue.

Gleams from Glencoe's Budget

THE proposed budget for the fiscal year ending February 28, 1957, continues a financial plan for the Village of Glencoe, Ill., known as "living within its budget." Village Manager Robert B. Morris incorporated in the budget report a pattern of "colored" pages designed to make easier reading of the report. All "buff-brown" pages are summary pages containing the essential information. The "goldenrod-orange" pages carry descriptive data analyzing the differences between last year's operation and the proposed budget operation. The "white" pages contain the statistical information, including the detailed budget.

Some Public Safety activities proposed for the current fiscal year are:

- Complete the new Village Hall and the new village Service Building and develop a parking area on the site of the present Village Hall and garage.
- Continue the Police-Fire program, begun in February 1954, with 15 policemen training in firefighting duties and seven firemen training in police work. Advantages are: (a) more interesting jobs, (b) better utilization of skills, (c) high morale from higher level career service.
- Purchase 12-volt mobile radio units, tape recorder, exposure meter, and finger-print camera for police service.
- Purchase 1,000-gpm pumping engine, 3,000 feet of fire hose, and two Scott Air-paks.
- Install 16 more street lights.
- Microfilm all essential village records.
- Continue use of White station wagons for Police-Fire patrol because of their ruggedness and roominess for carrying police and fire equipment, usability as ambulance or passenger car, truck, fire rescue squad, dog-catcher wagon, and police patrol car.

All 1956-model patrol cars have 12-volt electrical systems. Present patrol car radios are 6-volt units, two of which were purchased in 1949 and one in 1951. A $2,025 expenditure is for purchasing and installing three new 12-volt radio units in the three Police-Fire station wagon patrol cars. This amount includes $1,800 for three-way basic radio units and $225 for installation, outside speakers, and antennaes.

Last year's fines added to $1,124 less than anticipated in the budget, primarily because of fewer parking meter violations. Parking-meter fees increased $1,782 over last year's budget due to operation of 35 additional meters. The village has 209 Magee-Hale Park-O-Meters. Last year the village received $59.72 income per meter, or an average of $1.15 received per parking meter per week.

A Progress Report on Atlanta Purchasing

By ERNEST J. BREWER
City Purchasing Agent

Author Ernest J. Brewer

LET'S start with the multitude of items purchased and the large quantities required to meet the needs of a city of 500,000 people—and growing.

In 1955 we wrote 19,925 orders on 14,696 requisitions. The figures are almost identical to those of 1954. Money involved, however, was $1,401,500 more than in 1954.

The most interesting and pertinent fact about these figures is that while the volume of purchase orders increased $118,083.99, the number of purchase orders *written* declined by 374, and the requests by seven. This reflects the fact that we are increasing the volume purchases as conditions warrant, and volume purchases save money for the city, as well as paper work for the department.

Of purchase orders written, 27% were under $10; 20%, between $25 and $50; 12%, between $50 and $100; and 25% were for $100 and over.

Some 1955 Purchases

We think we are housekeepers for the city government. We purchased during the year: 12 basket-shaped calf muzzles; 79,380 bags of cement; 1,500 winter undershirts; 100 doses of pig tab worm medicine; 1,000 pounds of dog biscuits; 10,800 pairs of work socks; 1,440 pairs of men's work shoes; 4,067 pairs of men's work pants; 3,000 men's shirts; 2,400 pairs of shorts. Clothing, even in sunny Atlanta, is an item! Let's continue: 6 Spanish burros; 2,455 tons of coal; 110 tons of liquid chlorine; 71 miles of cast iron pipe; 43 passenger cars and 83 trucks (17 of these were garbage trucks costing $116,698).

The versatility of our buying staff is suggested by the purchase of 2,700 pounds of fruit cake; 840 pounds of sausage seasoning; and 40 yards of 4½-inch white ribbon for use by the mayor's office.

We bought a 75-foot tractor-drawn aerial ladder truck for $59,208; 12,562 feet of granite curb; 15,691 gallons of paint (which includes 9,667 gallons of traffic paint); and 1,387,729 gallons of gasoline—enough to drive a car 800 times around the earth. And besides, we bought 18,800 feet of fire hose.

Competitive bidding makes for economy and saves taxpayers' money. In Atlanta, bids are always opened in view of the bidders present at the formal bid opening. Bids are taken up until the stated hour in the advertising and no bids are accepted after that time. After the bid opening, bids are made available to anyone who cares to see them.

Bid Form

We use a form for competitive sealed bids designed by this office. In 1955 we did not receive a single complaint from a bidder alleging that a quotation sheet or bid form was not received by him. This bid form carries a master copy on which are listed the names of all to whom bids are mailed; on the individual bid only the name of the particular bidder is shown.

This makes for an improved bidder relationship, and makes friends for the Purchasing Department and for the entire city government. During the year we mailed 9,201 quotation sheets to bidders. Prior to the adoption of this bid form, we often received complaints alleging that bid forms were not received by prospective bidders.

Special Purchases

We endeavor to see that our specifications allow all qualified bidders an equal opportunity to bid. In addition, we make them brief. We are watchful to see that the city does not pay excise taxes. Purchase orders are issued annually to 100 vendors, enabling such departments as the motor transport, the water, etc., to purchase items up to $50, thus preventing costly delays.

The Reproduction Division is being handled by the Atlanta Public Library. The work is excellent and money is saved for the city. We continue to recommend a Micro-Filming Division. It is needed to preserve records and save valuable space.

We have worked with Judge Frank White and Lieutenant Fred Beerman in selecting and purchasing the furnishings for the new traffic court building. One of our buyers wrote the specifications and visited the office supply houses. This will be one of the newest and most modern of our municipal buildings. Furnishings will be tan, matching the walls and flooring. The suite of the three judges will be furnished in modern walnut. Furnishings, including machines, cost $40,000, which is under the estimate.

Our Slogan

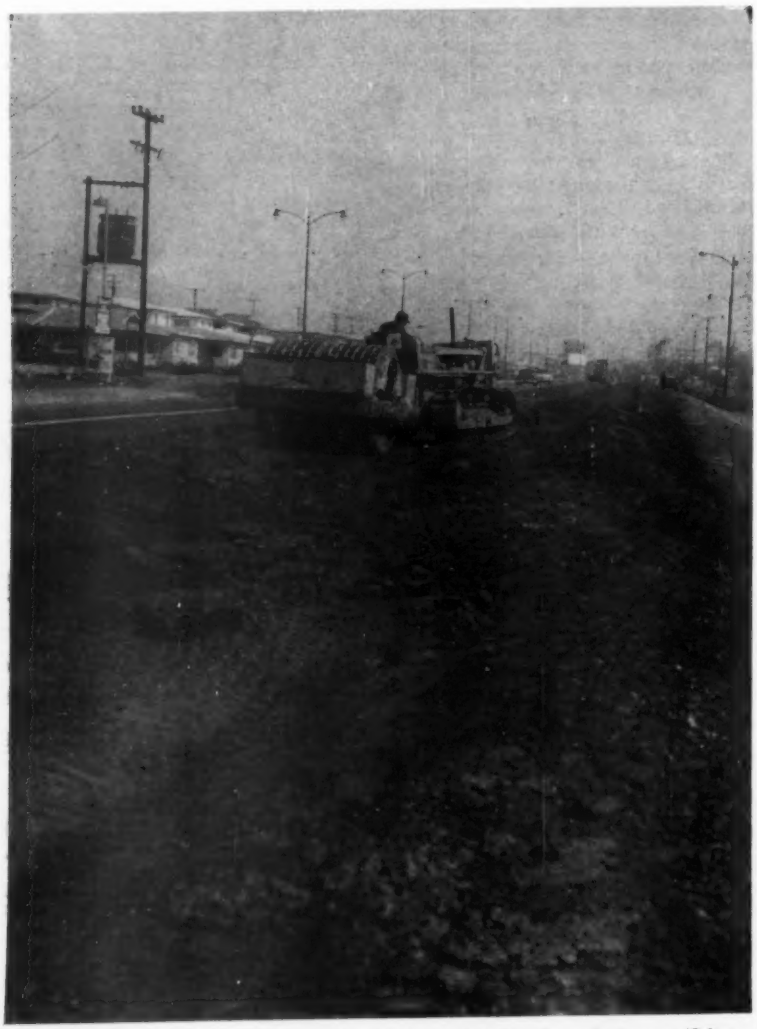
The Seal of the City of Atlanta (3½ inches in diameter) is now imprinted in the center of our letterheads. To keep constantly before our vendors and bidders our slogans, we have printed on the window-type envelopes going to our bidders the phrase: "Equal Opportunity to All Qualified Bidders."

EDITOR'S NOTE: A previous article on Atlanta purchasing by Mr. Brewer, appeared in THE AMERICAN CITY for September 1955 (p. 155), and was titled, "Atlanta, Ga., Seeks Friendly Bidding Relations."

TOLL plazas, interchanges, and service areas on the 156-mile Northern Indiana East-West Toll Road will be lighted by 1,800 General Electric mercury and fluorescent luminaires. The first 50 miles will open to traffic June 30, the next 75 miles by September 15, and the final 31 miles by November 15, 1956.

Salvage Old Streets and Save Money Too

An excellent base material can be produced at low cost by crushing the existing surface course



A grid roller breaks up the large pieces of material ripped up during scarifying.

By WADE E. PEEBLES
Director of Public Works and City Engineer
Inglewood, Calif.

SINCE repaving streets is an expensive proposition, any money-saving idea is worthy of consideration. Recently such an idea paid off for the City of Inglewood.

We just completed a contract for the reconstruction of a major city street that included crushing and reusing the existing 4-inch plant-mixed asphalt surfacing pavement. With the use of special crushing and processing equipment, we were able to reduce costs approximately 60% by eliminating much excavation and material handling. The more conventional method could have required 11,600 cubic yards of excavation and 17,600 tons of new base material.

Standard Equipment

The contractor broke up the existing pavement by scarifying it with a grader and rolling it with a Hyster grid roller for the preliminary crushing. Next, a patrol grader windrowed the broken plant-mixed surfacing and base material to one side to permit removal of the 2 inches of original ground. The grader then moved the crushed material to the other side for the removal of the final 2 inches of material. An Athey

After final crushing with this Athey crusher, the material is windrowed for the oil application.

PB-3 impact breaker, modified by installing spray bars within the crusher to keep down the dust problems, completed the final crushing operation. The maximum size of the pulverized material amounted to 1½ inches.

An oil-injection Seaman mixer applied SC-3 in the amount of 1% by weight to the crushed material, allowing a uniform distribution of oil throughout the mix.

This material was then placed in two layers, each 4 inches thick, and surfaced with 2½ inches of plant-mixed bituminous surfacing. The layers of subgrade material were well compacted by rolling prior to the addition of the second 4-inch lift and surface course.

In my opinion, the addition of cutback asphalt to the subgrade stabilizes the base material and creates a more homogeneous mass. This proved to be the case by soil tests taken along the entire project that showed a minimum of 90% relative compaction with an over-all average of 96%. The sieve analysis of the crushed material met the State of California's Standard Specifications, 1949, for base material. The plasticity index of the material had a low of 1.2 and an average of 4.1.

Traffic-Proven Subbase

An interesting experience that substantiates the use of this method occurred during construction of this project. Two lanes of the six-lane street were paved when a strike halted the job. Although the four remaining lanes consisted of only the crushed material compacted and finished ready for paving operations, traffic demands made it necessary to open the entire street. Several moderately heavy rainfalls occurred during this period; yet this base material held up excellently and required very little work to prepare it for the paving operations. In spite of the traffic and rain, we experienced no subgrade or base failures on the unpaved portion of the project.

Salvaged street material will prove to be an excellent base material if the crushing operation is handled properly. By using this material a substantial saving can be realized, and a very high quality end product can be obtained. It is also an answer to the ever-increasing problem of what to do with excess excavated material.

Stockpiling

At present we are stockpiling in our city yard all concrete and plant-mixed surfacing material removed from force-account projects. When a sufficient amount has been accumulated, it will be crushed and used for base material. This will result in considerable saving. Cost of crushing the stockpile material will be less than the cost of hauling and dumping. Since base material now costs the city approximately $2 per ton delivered to our yard, this will represent the actual saving for each ton of stockpiled material that is crushed.

Vernon Construction Company was the prime contractor, and Emmett J. Malloy, contractor of Inglewood, did the crushing portion of the contract.

Traffic did not harm the subgrade, even after heavy rains.

Municipal Public Relations

The City Tells Its Story

Edited by PAN DODD WHEELER
Executive Director, Government Public Relations Association

For towns and villages in New York . . .

Professional Public Relations Counsel Pays Dividends

WE CATER to the average taxpayer—the fellow who has a hole in the road in front of his house. We ask his advice, and, when something noteworthy is accomplished in the town, we give him and his committee of citizens the credit.

This is the formula William A. Kennedy, of Kennedy Associates, uses in the work his public relations firm does for a dozen towns and villages on Long Island, N. Y. It is a formula that has steadied village administrative processes, and produced workable arrangements among public officials, civic leaders, and the "average taxpayer."

Although Kennedy Associates has been working with town governments for about 10 years, such a service organization is still uncommon.* Mr. Kennedy's firm is one of the few in the country working exclusively in municipal government public relations.

Talking over a photo layout are Mayor W. Harry Lister, Rockville Centre; William A. Kennedy of Kennedy Associates, and Mayor Samuel M. Barnhart, Massapequa Park. The two New York villages are clients of the Kennedy firm as is the county association of municipal officials, which Mayor Barnhart serves as president.

One Service — Or Many

Kennedy Associates provides separately or in combination, three types of PR service:

1. preparation of annual reports
2. production of periodical (monthly, bimonthly, or quarterly) newsletters
3. development of year-round public relations programs.

Occasionally, Kennedy Associates will handle a campaign for a municipality to explain or promote one specific project.

Mr. Kennedy has found that when his group performs one service for a municipality, such as preparing a newsletter, it isn't long before he is asked to do an annual report, and eventually, a comprehensive PR program.

Why do villages, towns, and cities seek public relations services? The reasons are varied, as the background of town contracts indicate.

One client-community is headed by an administration brought to power by a strong, "grass roots" campaign. These officials reasoned that the people who voted for them wanted to keep feeling close to their village governments.

Another town administration signed with Kennedy Associates after nearly losing its first real election battle in 20 years. The officials recognized that the near-loss was a result of not keeping citizens up to date on what the town administration had been doing.

Another client-city wanted to sell voters on a school expansion program which had earlier been defeated for want of proper citizen education. "We took over," Mr. Kennedy reports, "for an eight-months' information effort. We outlined the needs for the expansion via monthly newsletters, citizen committee findings, and newspaper articles. The project was approved by an over-

* Public relations counseling firms which are members of the Government Public Relations Association include: Milt Bona & Associates, 1105 Broadway, Vancouver, Wash.; Hank Meyer, Public Relations, Miami Beach, Fla.; Max Nathan & Associates, Dayton, Ohio; Gerald Schwartz and Richard Rundell, 4111 N. Miami Ave., Miami Beach, Fla.; Walter-Jacques Associates, 18086 James Couzens, Detroit, Mich.; and Wayne Welch, Inc., 800 W. 9th Ave., Denver 4, Colo. The address of Kennedy Associates is 178 Sunrise Highway, Rockville Centre, N. Y. Yellow pages of your telephone directory, or of the large city nearest you, may provide the names of public relations firms competent to provide professional PR assistance to your town or city.

whelming vote because the people had the facts and could vote with reason."

Still another stimulant for Long Island towns to seek PR know-how for contact between local officials and taxpayers is the fact that most of the area communities have experienced a fantastic growth in recent years—with resulting problems. One of the clients was a small, socially compact 2,000 person community in 1950. It now has 19,000 residents. "You can imagine the need for municipal public relations under these circumstances," Mr. Kennedy says.

Improved city-employee relations was the aim of another client. Kennedy Associates began preparing a monthly bulletin for employees which was opposed, at first, by every department head on the grounds that "it was not needed." The bulletin was published in spite of this unfavorable attitude. And the first result was a letter of praise from the president of the employee's association. A second was a polite letter asking consideration of a pay raise. One year previously, the same employee association had announced to the public press, before any comment to city officials, a *demand* for a pay raise.

Employees' Bulleti
HIGHWAYS · PARKS · SANITATION
ELECTRIC · WATER · SEWERS · GARAGE
POLICE · RECREATION · GENERAL
VOL. I, NO. 3
Published by the Incorporated Village of Rockville Centre, N. Y.
FEBRUARY, 1956
Employees Associat'n Gains 16 Members
Adopt New Colors For RVC Police Uniforms
Water-Sewer Group Wins Safety Contest
This month in WESTBURY
SCHEDULE HEARING ON SIDEWALK ORDINANCE
$400,000 FOR STREETS UNDER STUDY BY BOARD
This Month in MINEOLA
PROCLAIMS FIREMAN WEEK; FIRE LOSSES LOW
"TAX RATE UNCHANGED; $7.40 FOR FOURTH YEAR

Finished products of the PR counseling firm staff: publications that "tell and sell" the municipal government story to citizens who want and need to know what happens at city hall.

Case History Shows PR Worth

Mr. Kennedy has found that the effectiveness of municipal public relations programs are "almost in direct proportion to the cooperation of the officials of a municipality and to their original reasons for initiating the PR program." For instance, Mayor W. Harry Lister at Rockville Centre has a sound understanding of the need for good two-way communications between village hall and citizen and has, consequently, realized benefits from the municipality's association with Mr. Kennedy's firm.

Coordinated public relations activities—with continuity—is what the PR firm tries to give its towns and cities. "You can't wait for an emergency to arise before sending out the call for PR," Mr. Kennedy believes. "Then it may be too late to save the life of whatever municipal project is dying. The PR preventive should be administered early and continuously over a period of time."

An example of the value of continuing public relations is the story of two neighboring New York towns where a newspaper serving the area "exposed" the need for a clean-up of so-called "slums" in both. Six months later, Town A, minus sound public relations counsel, had denied there was any need for slum eradication, claimed it was not a municipal responsibility, argued with the press, threatened to evict tenants of a tenement house, aroused the entire community to take sides and, in the late fall, watched its otherwise popular mayor go down to defeat at the polls.

Town B, a Kennedy Associates client, during the same six months appointed a citizens' committee to study the blighted areas, recognized there was room for improvement, contacted appropriate federal and state officials for help, passed a new ordinance and corrected many of the housing violations with full cooperation from citizens. During this period, Town B got "consistently good press" for its efforts.

Mr. Kennedy is the first to say "it wasn't any Kennedy Associates' magic that made the difference. The two towns in this situation simply provide a demonstration of the value of direction and PR understanding in relations with the public."

Many times officials in large cities and small have gone to bed one night with the peaceful assurance of a friendly press, radio, and citizenry. The next day they have awakened with controversy and antagonism raging. "We have to keep at it," says Mayor Samuel M. Barnhart of Massapequa Park (a Kennedy client). "We have to operate PR-wise, to examine, act, tell the story. The need for public relations know-how, on the job all the time, is a very real and ever-present one."

Story-telling devices published under the Kennedy Associates' direction include concise, newsy monthly papers like "Lynbrook, Month-by-Month" (5 inches by 7 inches, four pages, printed in black and white) and full-scale annual reports of which the current 25th anniversary publication of Massapequa Park is an example (24 pages, picture-filled, 6 inches by 9 inches annual report).

In publications and in work with all other publicity media, Kennedy clients are urged to keep the "average man" approach. "Indirectly," Mr. Kennedy says, "we want the citizen to know that he has helped his home town by his efforts on a committee, that real work is being accomplished by the administration, and that the work affects him. We want him to recognize that he must vote to register approval of the administration if he likes its policies or disapproval if he doesn't. We want him to be familiar with the procedure he can use to call attention to a pot hole in the street in front of his house, and we want him to be assured that when he follows this procedure something *will* be done about it."

In the publication, *A Municipal Public Relations Program that Works for Small and Medium-Sized Cities,*** editors have suggested several ways for the cities to obtain professional direction for a municipal public relations program. The public relations counseling firm is one. Costs for professional PR services are frequently less than for employment of even one full-time PR person.

** "A Municipal Public Relations Program that Works for Small and Medium-sized Cities," by Pan Dodd Wheeler, is available from Government Public Relations Association, Box 8260, University Station, Knoxville, Tenn, at a cost of $1.

This attractive filtration plant places Cleveland in a position to take full advantage of the South's industrial expansion.

Two Water Sources Needed

Cleveland, Tenn., supplements a spring-water supply with filtered water from the Hiwassee River

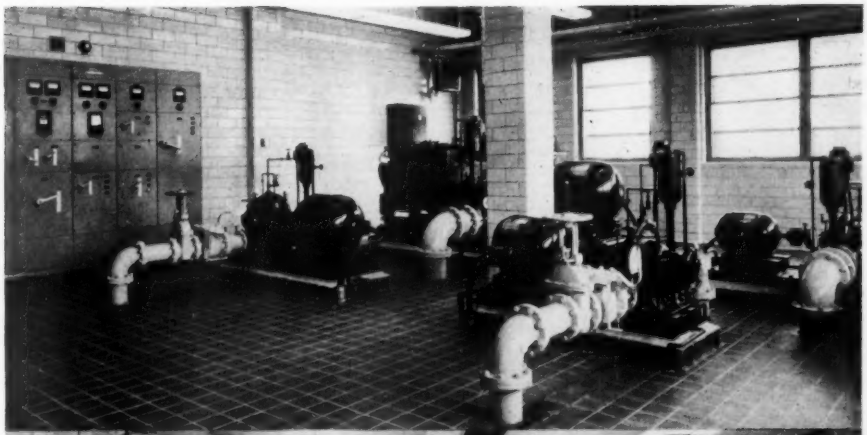
By EARL GILLILAND
Superintendent of Water & Sewers
Cleveland, Tenn.

Operation of the Hiwassee River intake and raw water pumping station is remotely controlled from this filtration plant located about five miles from the river.

THE hot, dry summers of 1952-53 gave a final push to the most aggressive municipal construction program ever experienced by the City of Cleveland. There were other reasons why the work should be done, such as increased population, growing per capita use of water, and stepped-up industrial activity; but the big jolt came with the hot weather.

For the first time it was necessary to impose sprinkling restrictions to conserve water, and when officials learned that the supply was gardually declining from year to year, they were convinced that corrective action was in order. Realizing the seriousness of the situation, Cleveland officials lost little time in developing adequate water and sewage treatment facilities. (See THE AMERICAN CITY, August 1955).

In the latter part of 1953 the city engaged the firm of Wiedeman and



These high-service units pump the filtered water approximately 6 miles into a high level 2,000,000-gallon ground storage reservoir.

Water samples are tested daily in this modern laboratory to insure a safe water supply for the citizens of Cleveland.

Singleton, Consulting Engineers of Atlanta, Ga., to study the water-supply problem and submit recommendations. After investigating several sources of supply, including springs, a creek and two rivers, the engineers recommended that Hiwassee River water be used. The advice was adopted and necessary financial arrangements were made to start construction at the earliest possible date.

Complete System

The water project included a raw-water intake and pumping station, 20-inch raw-water and filtered-water lines, a filter plant, a storage reservoir, and a 16-inch main from the reservoir to the distribution system.

The intake and pumping station lie on the banks of the Hiwassee River about 11 miles northeast of the city. Here two Johnson vertical turbine pumps, one rated at 1,400 gpm and the other at 2,100 gpm, take water from the river and pump it through approximately 5 miles of 20-inch main to the filter plant. The pumps are electrically powered by 100-hp and 150-hp motors, respectively. The larger pump is equipped with a Sterling gasoline engine for emergency use. The pipeline is protected by a Pelton Water Wheel surge suppressor.

The raw-water station uses a Link-Belt traveling screen, to remove floating debris. The pumps are supplied with S. Morgan Smith automatic cone valves, and Westinghouse control equipment. The operator can control this station from the filtration plant by means of a telephone-type control cable.

The filter plant that receives the raw water is rated at 2 mgd, based on the capacity of the filter beds. However, piping and other appurtenances have been designed so that we can triple the size of the plant without great difficulty.

A set of Wallace & Tiernan chemical feeders and chlorinators apply lime, alum, activated carbon, and chlorine to the water as it enters the plant. The water then proceeds to flocculation and settling basins where the chemicals permit most of the impurities to settle out. The effluent from the settling basins then flows to a pair of rapid sand filters, each rated at 1 mgd and utilizing Wheeler bottoms. The filters can be operated through Builders-Providence controls and meters. A washwater standpipe outside the building provides water at sufficient pressure to backwash the filters.

Effluent from the filters proceeds to the clear well where three single-stage pumps discharge the filtered water into a 20-inch cast-iron feeder main for delivery to a high-level,

ground-storage reservoir able to hold 2,000,000 gallons. The Chattanooga Boiler and Tank Company constructed this reservoir on a high ridge about 6 miles from the filter plant. From here, the water flows through 4,700 feet of 16-inch pipe to the existing city distribution system.

A Wallace & Tiernan fluoridator applies fluoride to the water as it leaves the clear well.

The De Laval high-service pumps are rated at 700, 1,400, and 2,100 gpm, and are driven by electric motors of 50, 100, and 150-hp, respectively. A Sterling gasoline engine connected to the 2,100-gpm pump provides standby service. An 18-kw generator driven by a gasoline engine, automatically cuts into the line whenever the main power supply fails. This unit provides sufficient power for lights and minor power needs.

The program included the laying of approximately 12 miles of 16- and 20-inch main to carry the water from the Hiwassee River to the distribution system. The raw-water pumping station and filter plant are connected by 24,800 feet of 20-inch cast-iron pipe used to bring raw water to the filter plant. An additional 31,100 feet of 20-inch pipe carries the water from the filter plant to the high-level reservoir. Water flows from the reservoir to the distribution system through 4,700 feet of 16-inch pipe. Class 150 pipe was used on the 16-inch line; the 20-inch line consists of Class 100, 150 and 200 cast-iron pipe. All pipe is mechanical joint, cement lined, and was supplied by the U. S. Pipe and Foundry Company of Birmingham, Ala.

The new plant supplements, rather than replaces, the original supply. The original system was built in 1908, using Payne Spring as a source of supply. This spring is located about 2 miles north of the center of Cleveland. In 1942, Waterville Spring, located about 4½-miles south of the city, was added to the system. Together, these two springs have a natural low-water capacity of 2 mgd. Summer pumpage during 1952 through 1954 exceeded this figure, making it necessary to draw heavily on the ground-water storage reservoirs. With the new supply available, a total of 4 mgd can be furnished on a daily basis. During short periods an additional 200,000 gpd can be taken from the springs and the new filters can be stepped up about 25% to produce an additional 500,000 gpd. Thus, for short periods, a total of 4,700,000 gpd can be supplied.

Although the filter plant as constructed has a rated capacity of 2 mgd, the original design allows for the addition of filters and other appurtenances, at minimum cost, to bring the plant up to 6-mgd.

Structural work for the raw water intake and filtration plant was done by the Kenny Construction Company of Skokie, Ill.; the mechanical work for the raw water intake and filtration plant was handled by Burford, Hall and Smith of Atlanta, Ga.

The combined system serves an area of approximately 64 square miles inhabited by about 20,000 persons. Population of the city proper is about 15,000.

The Water Department is under the direction of a three-man commission comprised of Norman Gordan, Fred White and C. L. Wilson.

Standby Electric Power for South Portland, Maine

By ALBERT W. WATERMAN
Commissioner of Public Works

SOUTH PORTLAND, Maine, has determined that its essential services shall never be powerless. Should central electrical power fail, the new city garage can fall back on emergency power so plentiful that it assures uninterrupted operation of lights, car and truck radio communication, and three-phase machine shop operation that includes welding, which is essentially necessary for heavy equipment repairs during stormy weather.

This full protection comes from a 35-Kohler electric plant installed last year in the city's new garage.

The standby plant is powered by gasoline and is two-wire remote-controlled. It has a 6-cylinder, liquid-cooled engine that develops 81.5-hp at 1800 rpm.

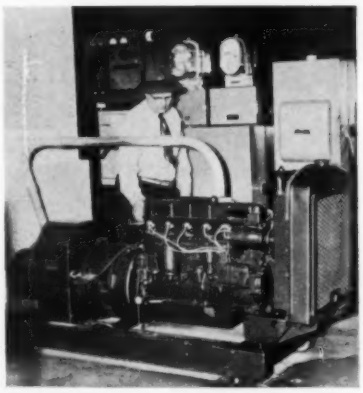
When the city's public works department first installed stand-by power, some years ago, its original installation was a small generator supplying 1,000 watts and capable of keeping only radio communication going in case of emergency. A few years later a 10-kw unit replaced it, but this was soon found inadequate to the task of keeping the machine shop, as well as radio communication, and lighting and heating plants in operation.

When the new garage was constructed, the main commercial power service was brought into it by buried cable. From this building power was distributed to six outside buildings housing vehicles, plows, employees' quarters, sign shop, blacksmith shop, and storage to include two additional heating plants.

When commercial power fails we go on emergency power within the next two or three minutes.

Service When Need Is Greatest

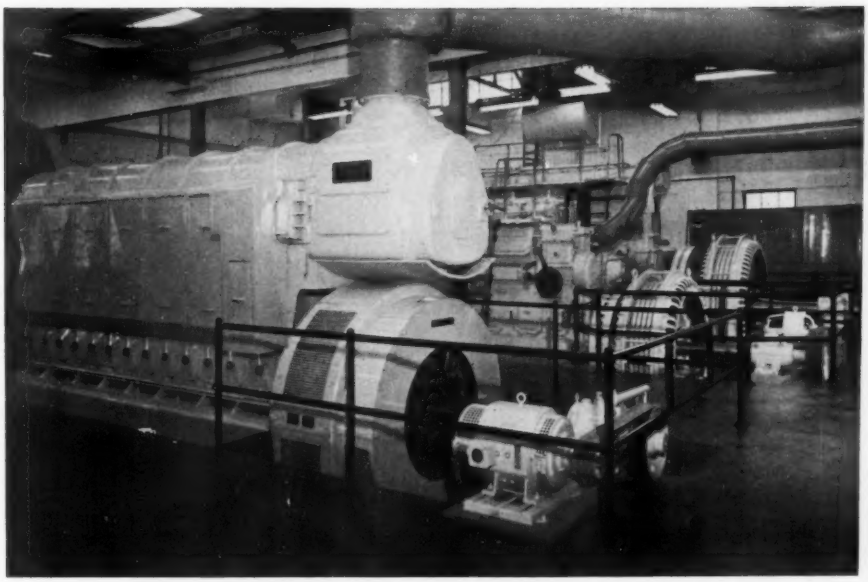
During high winds, hurricanes, and snow storms, power interruptions are quite frequent. This also is the time when the taxpayers need our services. The plant has proved its worth several times since installation. From now on the city may be powerless but the public works department will not be helpless and will carry on its function normally.



Philip Webster, mechanical supervisor for the public works department, checks the new standby installation.

Because the continued operation of the machine shop during emergencies was considered a "must," the city decided that a high output generator was imperative.

The plant as installed is adequate for carrying on all functions in a reasonably efficient manner. Curtailment of some unnecessary lights was planned for in its design. Good judgment and economy precludes installation of standby power capable of carrying peak loads.



Three big engines, each using natural gas for fuel, make the electric-power system a thrifty one in this little municipality.

A Little Village Electric Plant

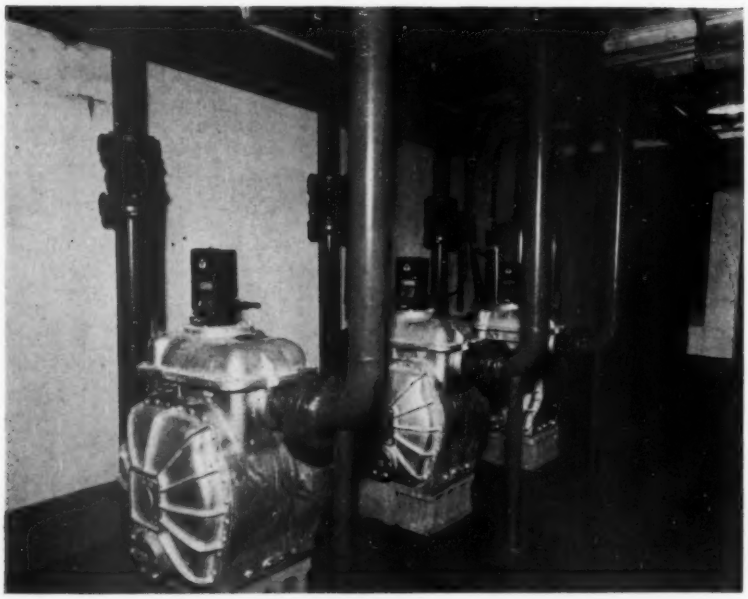
. . . reaps some dual-fuel power dividends

By HOWARD E. BARTON
Superintendent of Utilities
Wells, Minn.

BOTH the public and their municipal officials always are happy when something turns up that permits an increase in appropriations for needed improvements, and at the same time, lowers taxes. In the past, our village electric plant has been able to provide such funds by using more efficient electric generating equipment. Within recent years it has been able to continue this happy trend in the face of rising prices by switching to natural gas as a fuel.

Our village is small, with less than 3,000 people; nevertheless, its electric system has been able to contribute roughly $15,000 annually to the general fund. In addition, since 1949, it has supplied $20,000 for a

These four F-M centrifugal pumps circulate the cooling water for the plant.



Each of the three engines has a separate gas meter.

well and pump, $20,000 for mercury-vapor street lighting, and $65,000 for hospital construction.

Even more important, it has supplied us with $196,000 for power plant enlargements that included a new Fairbanks-Morse 1,920-hp dual-fuel engine. At the same time we have retired $50,000 in bonds and made the annual contributions to the village general fund. Furthermore, we did this while reducing electric rates. Today, the plant is free of debt and has a balance of $45,000 in the bank plus $100,000 in government bonds.

How the System Started

Little municipalities like ours get into the electric business more or less by default. Our people like the convenience of electric power, but in the past no large private utility showed any great interest in the small market we had to offer. So our people decided to build their own plant and system, and found it a good, thrifty undertaking. After it became a successful, going business, the village had opportunities to sell it, but was not interested.

Our electric system started in 1895, switched from steam to diesel in 1931, and started converting to natural gas in 1950. We made the switch by converting a 10-cylinder, 1,600-hp F-M diesel to dual-fuel operation and were encouraged to see earnings on the upswing ever since. Its operation was so efficient that we immediately converted a second F-M engine, a 1,400-hp unit, to dual-fuel the following year. The low-cost gas fuel boosted the plant's net income to the highest figure in its history at that time.

Plant Enlargement

This favorable financial picture enabled us to embark on our latest power-plant enlargement. We first expanded our plant facilities, connecting the plant itself with the warehouse and garage. We then dismantled three old diesels, constructed a partial basement, and made room for our new big dual-fuel unit. The new engine brought the plant's total power to 5,520 hp.

Operating results here have been all that any superintendent could want. For example, in one typical operating period, the engines averaged 10.1 cubic feet of gas and only 0.0104 gallons of oil per kwhr. The average fuel cost was only 4.5 mills per kwhr. In a month of maximum production by the new unit, the plant has operated on 9 cubic feet of gas and 0.012 of a gallon of oil per kwhr at an average fuel cost of only 3.72 mills.

Better Working Space

By putting the new unit's accessory equipment in the partial basement, we gave ourselves more working space on the main floor. We have a centrifugal jacket-water pump on the new engine and also a motor-driven centrifugal pump with a separate line to carry jacket water to the coils in the forced-draft Diesel Service cooling tower that serves the entire plant. The same jacket water circulates through pipes in the floor of the new offices and garage to heat the buildings.

An engine-driven pump circulates the lube oil through its circuit. This circuit includes a full-flow Air Maze filter and a Kewanee-Ross cooler. Some of the oil is by-passed from the pressure system through a Briggs purifier.

Feeding Natural Gas

Natural gas is fed to the three dual-fuel engines through separate American gas meters. It enters the meters at 47 psi and passes through Fisher regulators to the engines at 25 pounds for one engine and 33 pounds for the other.

Exhaust gasses pass first through a horizontal pre-snubber located inside the plant and then through a vertical snubber on the outside. Both are Burgess-Manning units. Intake air passes through an Air-Maze silencer on its way to the engines' blowers. This arrangement, plus sound-deadening acoustical tiles on the walls and ceiling of the engine room, makes the plant quiet.

Color Scheme

The color scheme in the plant was designed primarily with an eye to utility. The engines and alternators were painted buff; jacket water pumps, filters and piping, blue; the raw-water system, green; lube-oil equipment, yellow; gas meters, regulators and pipes, red; and the fuel-oil system, purple. In this way we can identify valves and trace piping quickly and easily. Moreover, it adds a cheerful note to the engine room.

The added work we did was satisfying from a management standpoint also. Maintenance costs dropped to one-third that of previous years. The better facilities, the quiet operation of the equipment, and its dependability, give everyone concerned with the electric system a great sense of satisfaction with the over-all results of the expansion and improvement program.

This municipal power plant, which has long been a valuable citizen of the community it serves, has increased its value each year. All plant equipment has been paid for from earnings.

Rough Going At Indianapolis

All wasn't peaches and cream when Columbia Construction installed 8000 feet of 36-inch pipe for the Indianapolis Water Company along White River Parkway in the Hoosier capital.

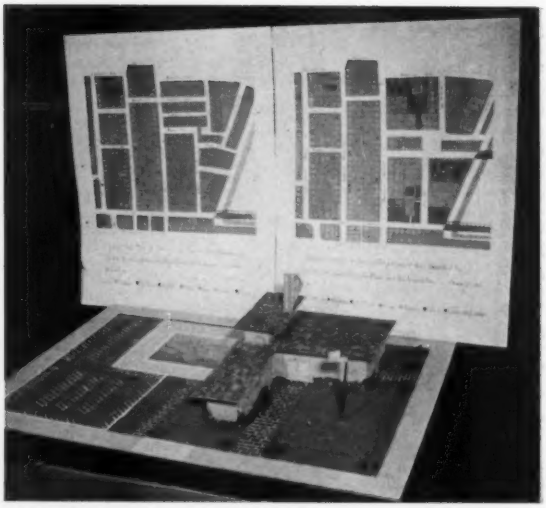
This picture shows where the line crossed 10th Street. A telephone conduit was supported with a timber thrown across the ditch, a 10-inch gas main crossed just below, and unstable soil kept filling the bottom. A 2-foot deflection was called for here and the contractor had to duck down under the existing utilities as well. Also, a tie-in was made with an 8-inch water main on 10th Street not shown in the picture.

"Although this was the first time we had installed a water line of concrete pressure pipe down city streets," reported Carl F. Kortepeter, engineer for Columbia Construction, "the steel and rubber joint made the pipe easy to work with. The 10th Street crossing wasn't too unusual and we used a couple of bevels to make our 2-foot deflection, then rotated one of them slightly to drop down enough to clear a gas main. Another bevel adapter or two brought us back on line."

The bevel adapters Mr. Kortepeter refers to are specials made up of a bell ring and a spigot ring set back to back at an angle of 2° or 4° and are kept on the job to handle such situations. The pipe on this job was prestressed concrete cylinder pipe and was supplied by Price Brothers Company with plants in Dayton, Cleveland and Miami.

Price

In the first step of a four-stage study, sixth graders survey uses and conditions of existing structures before preparing plans for redeveloping neighborhoods in Scranton, Pa.



Example of student's work shows map of existing conditions in project area, proposed redevelopment plan, and model community center with swimming pool and off-street parking.

Scranton Sixth Graders

Focus Public Attention on Slum Clearance

IN a clever school-community project, 1,700 sixth graders in Scranton, Pa., public schools recently completed an extensive city redevelopment study. Under the direction of their teachers, the schoolchildren made a survey of virtually every block in Scranton, learned to tackle slum and traffic problems, and drew blueprints for parks, schools, and other community projects. Widescale interest in the sixth-grade project has focused public attention in Scranton on plans to redevelop areas damaged by floods.

The eight-week study took root after the August floods last year. The project was launched as part of a social studies course to make "pupils conscious of neighborhood needs and for developing in them an awareness of their role in the improvement of their city." It had the support of the Scranton School Board, local city officials, the Scranton Redevelopment Authority, the City Planning Commission and state and national planning groups and housing authorities.

General supervisor was Terrence F. Gallagher, Sr., supervisor of art and member of the Scranton Redevelopment Authority. Sixth-grade teachers attended several briefing sessions before the start of the project to learn about various approaches to the work. Isadore Candeub, city planning consultant to the redevelopment agency, offered technical advice in conducting the project.

Project Has Four Stages

The study, involving 48 sixth-grade classes, was carried out in four stages. In the initial phase, the pupils of each area made an "on-the-spot" survey of at least nine square blocks surrounding their individual school. The junior planners made "land use" maps to scale of neighborhoods as they exist. They learned to become "block" conscious and began to think about their homes in terms of distances to school, to recreation areas, etc.

During the second, or "planning," stage the school children studied their neighborhood needs and developed ideas and plans for their "dream" neighborhood. They learned to think in terms of a neighborhood community, what was considered to be good and bad housing, and what steps might be taken to eliminate slum areas. They took on the job of relocating streets and highways to break traffic bottlenecks and planned specific neighborhood projects from face-lifting business districts, new parks to a large heliport to accommodate helicopters carrying freight to business places.

In the final or "activity" phase, each class constructed a model of its own selected neighborhood project, ranging from a hexagonal futuristic school to an elevated parking center. The young architects improvised by using discarded materials. For example, a chimney was made out of a cut-down pencil box, and porch railing was fashioned with wire screen mesh to suggest wrought iron.

When the 48 finished projects of the youngsters were put on display for one week in one of Scranton's larger department stores, the exhibit drew representatives from national, state, and local organizations interested in municipal planning, and the Federal Housing Administration asked for information about the project.

EDITOR'S NOTE: See "Scranton Pioneers in Using Urban Renewal Funds for Flood Reconstruction," on pages 112-114 in THE AMERICAN CITY, November 1955.

Transportation. Over the roughest terrain, through sand, soft earth or mud, in good weather or bad, the Universal 'Jeep'†, with the extra traction of its 4-wheel drive, takes supervisory personnel, work crews, tools, equipment and supplies wherever they are needed. It shifts easily into conventional 2-wheel drive for quick highway travel between jobs.

Ten billion miles of proof!*

One of the reasons why so many 'Jeep' vehicles are used in public service

Hauling and towing. The "go-anywhere" 'Jeep' Truck is the only truck in its weight class originally designed and engineered completely for 4-wheel drive off-the-road travel. It carries one-ton payloads... tows heavily loaded trailers.

Mobile power. The Universal 'Jeep', with power take-off or hydraulic lift, takes power right to the job to operate this trencher and many other types of equipment including winches, grader blades and sprayers or dusters.

Maintenance. The 4-Wheel-Drive 'Jeep' Utility Wagon carries up to 110 cubic feet of bulky cargo, or six passengers. It takes supervisors, workers and tools to maintenance operations other vehicles can't reach.

It's easy to see why economy-minded officials everywhere are turning to 4-Wheel-Drive 'Jeep' vehicles for public works and public service operations. They are the only 4-wheel drive vehicles in their weight class that are time-tested and performance-proved in more than 10 billion miles* of on-the-job transport service. Their "go-anywhere" dependability provides extra insurance in daily public service use and in emergencies.

Only Willys has so many years of experience in engineering 4-wheel drive vehicles in the under 6000 GVW weight class. 'Jeep' vehicles help stretch tax dollars through their long life, low upkeep and high resale value. Ask your Willys dealer for an on-the-job demonstration, or write for information.

The 'Jeep'® family of 4-Wheel-Drive vehicles

WILLYS... makers of the world's most useful vehicles

WILLYS MOTORS, INC., TOLEDO 1, OHIO

*An understated estimate of the miles of transport service driven by 'Jeep' family vehicles. Some estimates place the mileage at more than *fifty* billion.

†Model CJ-5 shown.

Westinghouse fluorescent luminaires' exclusive features speed installation and maintenance

Look what's new in Cleveland! A great white way of fluorescent light by Westinghouse 4FSL-72 street lighting luminaires. The change from the old system to the new was made in record time because Westinghouse units are designed for quick installation and simple maintenance. The importance of these advantages can be measured in real savings—savings in labor cost during installation and for the maintenance life of your street lighting system.

If you are planning a fluorescent street lighting program, examine these important features, and you will agree that the Westinghouse 4FSL-72 fluorescent luminaire is built for a lifetime of efficient, economical operation.

More information? See your nearby Westinghouse representative, or write Westinghouse Electric Corporation, Lighting Division, Edgewater Park, Cleveland, Ohio. J-04390

WATCH WESTINGHOUSE

where ***BIG*** *things are happening for* ***YOU***

A new look for the "Lighting Capital of the World," Cleveland, O.

Attaching luminaire to pole . . . is done by tightening four bolts on the heavy-duty mounting bracket. 4FSL-72 may be mounted horizontally or at a 15°-30° angle for wider light distribution.

Connecting wiring . . . three knurled nuts are loosened *without tools*, allowing reflector to hinge down for easy access to ballast and wiring. Wire is brought through watertight bushing; leads are then attached to terminal block.

Closing luminaire after installation . . . cover may be opened or closed from either side by releasing three pressure latches. Cover is clear acrylic plastic which will not discolor with age. Fiber glass housing *never* requires painting.

Light Conversation in San Francisco

The need is clear—when will the public see it and support a relighting program?

By B. A. DEVINE, *Manager*
Department Light, Heat & Power, San Francisco, Calif.

SAN FRANCISCO has 915.75 linear miles of improved streets, which include 65 miles dedicated to one-way traffic. Our average number of lamps per mile is 30.

Of the 28,631 lighting units installed in San Francisco, 18,500 belong to Pacific Gas & Electric Co., 7,700 to the city, and the balance are jointly owned. About 11,000 units are of modern design, leaving 17,000 obsolete units in service. To date, only 28% of the 1945 Bureau of Light, Heat and Power 6-year program, consisting of 81 projects to cost $2,500,000, has been completed.

An example of San Francisco's many poorly lighted streets is Geary Boulevard from Arguello to 25th Avenue. This stretch—25 blocks long—has a record of 95 nighttime accidents, including five fatalities in one year. City-wide there were 49 nighttime fatalities out of a total of 77.

An example of what improved street lighting can do may be seen at the intersection of Fell and Stanyan Streets. For the first nine months of 1953 there were six personal injury accidents and 14 property damage accidents. Then along with channelization and traffic signals, fluorescent luminaires were installed. Each of these General Electric units has an output of 21,000 lumens. This large amount of light is practically glareless because of the large physical size of the light source—four 6-foot-long fluorescent tubes in each fixture.

1954 Record

During the same nine-month period of 1954, there were only two property damage accidents and two personal injury accidents at Fell and Stanyan, an 80% reduction.

Crime in San Francisco is also correlated with darkness. There are figures which show what percentage of seven types of crimes were committed during the hours of darkness in San Francisco. These figures and the

Modern lights on Geary Boulevard looking east from Kaiser Hospital.

seven types of crimes are listed below:

	Per Cent
Murder and nonnegligent manslaughter	66
Rape	75
Robbery	78
Aggravated assault	75
Burglary—breaking in and/or entering	74
Larceny—theft	63
Auto theft	77

These figures are in line with the national average. Police throughout the country estimate that proper lighting would cut nighttime crime by 50%. Need for the improvement was presented in an article in the San Francisco City-County Record for January 1956.

Principal Factor

Whatever else may be read into these figures, there is no doubt that a principal factor is poor visibility. The National Safety Council attributed 10,000 traffic fatalities to poor vision in 1955.

To alleviate this problem in San Francisco, adequate funds must be appropriated for the job. But how can this be accomplished with taxpayers holding belief that street lighting is not worth the cost? The answer is to bring about the realization that we pay for good street lighting whether we have it or not. If we don't have it, we pay for it through the economic losses that result from the greater number of accidents. National Safety Council reported that for every traffic fatality there were 35 persons injured, 150 cars damaged, and $95,000 of economic loss. In San Francisco that figure for 1954 would be $4,655,000 for the 40 nighttime fatalities alone.

Reduction in traffic accidents lowers auto insurance rates, something San Francisco could use becauses it has the highest rates in California. Vandalism and delinquency will be reduced, cutting the cost of protection. A better lighted commercial area will increase after-dark shopping and help keep business in the city.

On those 25 blocks on Geary Boulevard, the project of relighting would require 156 luminaires mounted on railway poles, costing $65,000. The city's annual operating cost would be reduced from $9,000 to $6,400 because there would be fewer and more economical units. The new units would put 250% more light on the pavement than the old ones. The savings in property damage alone caused annually on this street should finance the capital outlay.

Park Lighting Needed

Parks are deserving of good lighting. Many people are afraid to cross Golden Gate Park at night on foot, and there are only 90 lighting units for the 13.5 miles of vehicle roads, not including the park Crossover and Kezar Drives.

Residential lighting in San Francisco is comparatively good, but our citizens are far from completely cognizant of the need for higher levels of illumination in their business, commercial, and arterial areas.

Communicating the need for adequate lighting to the public is difficult because the benefits of good street lighting are not as obvious as those of new schools, hospitals, highways and parks. The layman can visualize the new school in terms of children and bright new

Night and day views at the Fell-Stanyan intersection with S. Ivan Sandberg and Al Tanner of the San Francisco Public Works Department checking the new fluorescent units.

"Our traffic regulates itself through new CROUSE-HINDS Time Cycle Control System"

—Mr. H. J. Hoose, Traffic Engineer, Charlotte, N. C.

"Five years ago we installed a variable-time cycle Trafflex control system that relieved much of our downtown congestion. But we still found such unpredictable volumes during peak periods that the programmed cycle changes couldn't keep pace.

"It took Crouse-Hinds new Time Cycle Control by Traffic Density to eliminate Charlotte's traffic headaches. Now, by using Crouse-Hinds' new Traffic Density Master Controller in conjunction with our Trafflex Control System – *the flow of traffic controls the time cycle . . . automatically and instantaneously.*

"Detectors placed at strategic points transmit traffic volume to the Master Controller, which evaluates the density and immediately makes necessary changes in the time cycle to relieve congestion. This has resulted in less accumulation of traffic at intersections and less traffic build-up prior to peak periods. In short, we have found that Crouse-Hinds' Time Cycle Control by Traffic Density permits our system to operate at *maximum efficiency at all times.*"

A NATIONWIDE DISTRIBUTION exclusively through ELECTRICAL DISTRIBUTORS

The ideal solution to your traffic problem may be Crouse-Hinds Trafflex Control System with new Traffic Density Master Controller. Present users of Trafflex systems may add this new accessory to existing facilities. Write for full details.

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rooms for them. But to appreciate good street lighting it is necessary for him to absorb a lot of unpleasant statistics. However, repeated exposure to the facts will convince him, for more and better street lighting is needed in San Francisco.

To successfully conduct the educational program that is needed will require the active participation of improvement clubs, merchants' associations, the police department, safety groups and other public spirited-organizations and individuals who have a devoted interest in making San Francisco an even better place to live. I bespeak that cooperation so that our city may enjoy a new era of safer, happier, and more profitable nighttime living.

Springfield, Mass.,

Street Relighted by Orderly and Brilliant Plan

Preliminaries were reviewed in Part I, which appeared in the June issue; Part II deals with the details of the program—it's simplicity, types of traffic streets relighted, installations, and accomplishments to date

This system of lighting provides for no lamps smaller than 2500-lumens. It also involves only four types of luminaires and four sizes of lamps.

This plan of lighting tends to provide an automatic color indication of the relative importance of various traffic arteries and will help to serve as a warning to traffic approaching different types of areas. For example, the main business areas are indicated by the white light from the fluorescent fixtures, the main traffic arteries are lighted with the bluish-white illumination of the mercury-vapor units, and other areas are identified by the yellowish light of incandescent lamps. It has been found that different colors or intensities of illumination serve as an indication of danger spots and traffic seems to unconsciously slow down as drivers approach a "better lighted" area.

Details of the recommended minimum standards of illumination with specifications of luminaire, lamp, spacing, and mounting heights are shown on the following pages.

Programming the Modernization

The cost of *complete* modernization of the street lighting at Springfield, Mass., may seem to represent a sizable amount of money. Yet, expenditures for lighting the streets have not increased anywhere near the extent that other municipal costs have risen, nor in any relation to the need for good lighting to combat crime and to provide good seeing conditions for the vastly greater number of vehicles on the street. Here's how municipal expenditures in Springfield have increased in the last 20 years:

Business Street

Average Illumination Design—1.5 foot candles
Assumed Street Width—60 feet
Spacing—Approximately 65 feet
Location—Staggered
Bracket—None
Mounting Height to Light Center—28 feet
Lamp Size—20,000 Lumen Fluorescent
Luminaire—4 Tube Fluorescent

Heavy Traffic Street

Traffic Density—Over 1200 vehicles per maximum night hour
Average Illumination Design—1.0 foot candles
Assumed Street Width—60 feet
Spacing—Approximately 125 feet
Location—Staggered
Bracket—8 foot
Mounting Height to Light Center—28 feet
Lamp Size—20,000 Lumen Mercury Vapor
Luminaire—Oval, Class III—Reflector-Refractor Type

Medium Traffic Street

Traffic Density—500-1200 vehicles per maximum night hour
Average Illumination Design—0.8 foot candles
Assumed Street Width—50 feet
Spacing—Approximately 180 feet
Location—Staggered
Bracket—6 foot
Mounting Height to Light Center—28 feet
Lamp Size—20,000 Lumen Mercury Vapor
Luminaire—Oval, Class III—Reflector-Refractor Type

Light Traffic Street

Traffic Density—150-500 vehicles per maximum night hour
Average Illumination Design—0.6 foot candles
Assumed Street Width—40 feet
Spacing—Approximately 135 feet
Location—one side
Bracket—6 foot
Mounting Height to Light Center—25 feet
Lamp Size—10,000 Lumen Incandescent
Luminaire—Round, Class III—Reflector-Refractor Type

Schools and Libraries	**up**	**150%**
Health and Welfare	**up**	**200%**
Police and Fire Protection	**up**	**170%**
Street Lighting has risen only		**25%**

During this same period of years, the number of automobiles and trucks registered in Springfield alone has increased 81%. It can readily be seen that improvement in street lighting has not kept pace with the faster and more dangerous mode of living prevalent

Another famous American thorofare with

Millerbernd
Octa-Tube
LIGHTING STANDARDS

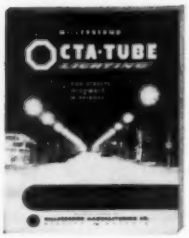
STATE STREET, in Salt Lake City, one of America's most impressive thorofares, approaches the Utah State Capitol . . . set against a backdrop of rugged mountains.

For this handsome, well-planned arterial, Salt Lake City chose Millerbernd Octa-Tube lighting standards.

Important considerations in this choice were extra rigidity and long life. Millerbernd Octa-Tubes qualified highly on both counts . . . because they are cold-roll-formed of corrosion-resistant, *extra-strength* steel.

120 Octa-Tube standards were used in this installation. The luminaires are General Electric Form 109, mounted on 12'-0" arms, 31'-6" above the pavement.

What can modern lighting do for your city?
This new free booklet will answer many of your questions . . . how business benefits, how public safety is increased . . . how you can do the job at low cost. Write for Bulletin OTA.



Millerbernd
MANUFACTURING CO.
WINSTED, MINNESOTA

in municipalities in the United States today.

Good lighting, like anything else worthwhile, costs money. But this vital community service can also be considered as an investment, for it often saves more than it costs, in reduced crimes, traffic accidents, vandalism, property damage and loss of life or earning power. A relighting program in a Connecticut city reduced night accidents so drastically that, in spite of an increase in day accidents, liability insurance rates dropped 8%. This saved car owners more than four times the cost to the city for the new street lighting.

Certainly this modernization could not be completed overnight—nor hardly in one year. City officials must supply funds. The utility company will have to provide several million dollars worth of new facilities. Often this money can be made available on a continuing basis only by bold steps. In Springfield a six-year program was suggested. It requires increased city expenditures of some $91,600 per year—0.3% of the total municipal budget annually. This program will allow for the orderly planning of substantial portions to be done each year, and makes it practical and worthwhile for the Electric Company to tool up for a continuous work project.

Streets reasonably well lighted are scheduled for later attention. Piecemeal installation of one or two units is avoided as unnecessarily expensive. Mostly sections of a street a mile or two in length are relighted at one time.

Among the streets that appeared to be most in need of modernization were eight main streets and the unlighted residential streets.

Final priority of specific projects was decided on advice of the Police Department, street lighting superintendent, traffic engineer, Planning Board and the utility. As rapidly as projects are outlined and priority assigned, they are turned over to the Electric Company for engineering and cost estimates. The plans are then approved by the street lighting superintendent.

This program was fortunate in receiving the active support of the newspapers, radio and television stations, business and civic clubs, municipal departments, and other groups in a position to understand and communicate the need for lighting improvements to the citizens of the community. It is through this wholehearted cooperation of all concerned that Springfield will shine as a safer and more pleasant place in which to live.

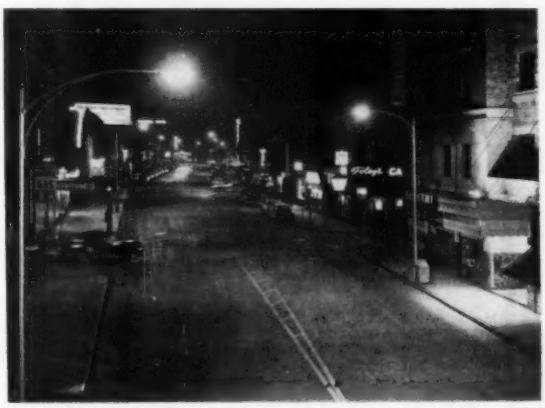
Getting Busy at Installing

Based on present street light rates and an assumed rate for the proposed fluorescent units, an increased annual expenditure of $550,000 would provide a modern street lighting system of the minimum intensities recommended by nationally accepted practice. This would be only about $3.25 per capita.

This cost would be divided according to the principal street classifications as follows: main business streets, 3.7%; heavy traffic streets, 14.8%; medium traffic streets, 36.8%; light traffic streets, 9.4%; other streets, including residential, 35.3%.

To accomplish this modernization in a reasonable and orderly manner, it was suggested that the city provide for a $91,600 annual increase in street lighting budget for the next six years, when the program would be completed. This increase represents slightly over three-tenths of 1% of the total city budget. The plan will also require an investment of several million dollars by the Western Massachusetts Electric Com-

21,000-lumen fluorescents light Main Street south from Railroad Arch.



20,000-lumen mercurys light Main Street north from Railroad Arch.

2,500-lumen incandescents in suburban open-type reflectors with directional shields light residential streets.

"but the light wasn't working!"

Maybe the poor chap was right! Failure of traffic signals—owing to faulty connections causes many accidents. Big danger spot—the terminal!

Be sure the terminals in your community's traffic-control system give maximum protection against human error and the strain of operating conditions.

PRE-INSULATED *Diamond Grip* TRADEMARK TERMINALS . . .

are precision-engineered for safety, dependability, tensile strength. They are vibration proof . . . won't be weakened by rumbling traffic . . . because they provide insulation support. PIDG are corrosion resistant . . . won't be damaged by exposure . . . because their copper is electro-tinned and pre-insulated.

Many traffic-control manufacturers are already using A-MP Pre-Insulated Diamond-Grips in their original equipment. You, too, can be sure of better, safer electrical connections by using A-MP terminals in maintaining this equipment.

An API field representative will be glad to show you how easy the terminals are to apply with A-MP Certi-Crimp tooling . . . and how little they cost. He can prepare a kit of terminals and connectors suited to your specific requirements . . . together with the proper crimping tools.

API branch offices stock popular A-MP terminals and tools for maintenance and repair purposes. Contact your local API office for a catalog.

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Outdoor Lighting

pany in new equipment, labor, and related facilities.

Those streets that were reasonably well lighted were scheduled for later attention. Specific projects involving several blocks of an area or sections of a street at least a mile or two in length were lighted at one time. Among the streets that appeared to be most in need of modernization were the unlighted residential streets, main business streets and some of the through traffic arteries.

Accomplishments to Date

During the latter half of 1955, with the modernization program under way, the number of street lights in Springfield increased from 6,478 to 7,090, a gain of 612 lamps. The 1956 revenue increase to the utility from these lamps amounts to approximately $48,000 a year.

The 2,500-lumen lamps increased by 850 for the year, while the 1,000-lumen lamps dropped by 173.

The installation of forty-five 20,000-lumen fluorescent luminaires, two hundred eighty-six 20,000-lumen mercury-vapor luminaires, ten 15,000-lumen mercury-vapor luminaires, and thirty-six 11,000-lumen mercury-vapor luminaires naturally reduced the number of 10,000- and 6,000-lumen incandescent sizes.

Last year 188 streets were involved in the program. Two major intersections and 7½ miles of main arteries were relighted.

Projects planned for Springfield in 1956 include 12.5 miles of main arteries and the continuation of residential street lighting at the pace set in 1955.

Priority to be assigned to specific projects is based on the advice of the police department, street lighting superintendent, the traffic engineer, the planning board, and the utility. With the cooperation of all concerned, Springfield is becoming a brighter, safer, and more pleasant city.

STREETS, MILES, UNITS, LUMENS, COST TO CITY

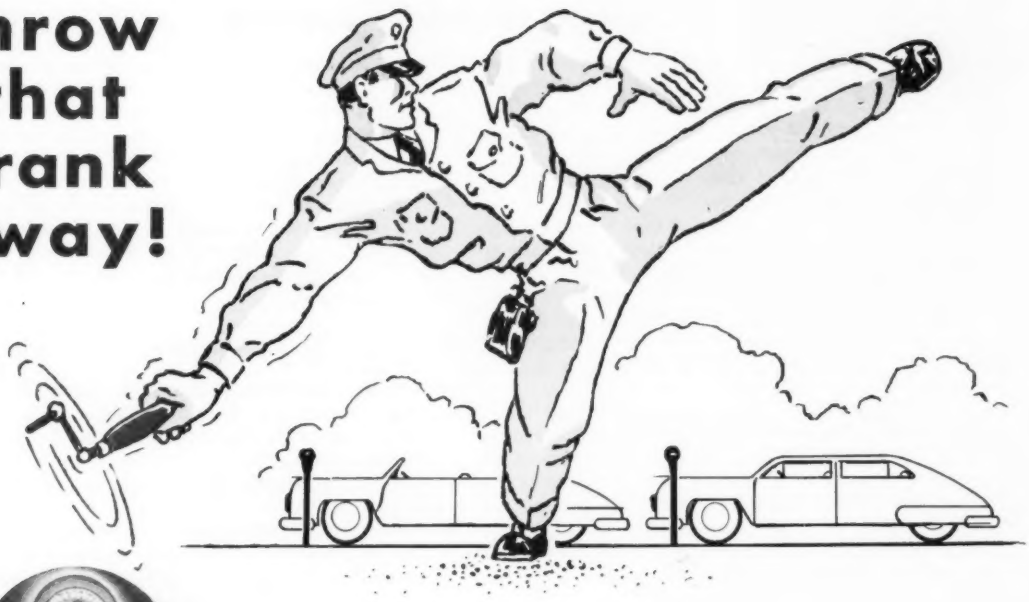
		Proposed		
Classification	Miles	No. of Lights	Total Lumens in Thousands	Annual Cost to City
Business Streets	3.6	222	4,440	$ 36,630
Heavy Traffic Streets	26.4	1,141	21,520	150,099
Medium Traffic Streets	86.5	3,814	47,340	330,306
Light Traffic Streets	24	951	9,240	72,660
Other Streets (including residential)	190	7,191	17,962	295,146
TOTALS	329.5	12,019	100,502	$884,861

New Mercuries from Sales Tax In Havana, Ill.

SALES TAX receipts in Havana, Ill., which are not earmarked for specific use will be spent for new street lighting downtown. Sales tax money collected in November and December 1955 amounted to $5,456.

The new system will cost $15,000 for 36 mercury-vapor units, writes Mayor Clarence I. Chester.

throw that crank away!



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DUNCAN-MILLER DUPLEX ®

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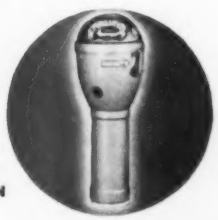

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And with the same motion relieve your city's budget of costly winding expenses.

Simple . . . . Accurate . . . . Always ready to operate . . . . **DUNCAN-BUILT** products never suffer from spring fatigue and thrive on "heavy duty" parking control assignments.

Clear the deck for new highs in net available revenue when **DUNCAN-MILLER**'s work horses of the industry go into action.

Write today

DUNCAN PARKING METER CORP.

835 NORTH WOOD STREET, CHICAGO 22, ILLINOIS • FACTORIES: HARRISON, ARKANSAS AND MONTREAL, P.Q., CANADA

Manufacturers of fully automatic and manual parking meters.

Lighting for Night Business

OVER 2,000 shopping centers are going up, spreading out, and lighting up in the United States, according to the General Electric Co. They range from the neighborhood strips to regional centers with facilities that include office buildings and hospitals. With the increase in nighttime shopping, lighting acquires greater value.

Lighting identifies the center, makes parking easy, serves to direct traffic flow and guide customers to specific areas, beautifies walkways and provides distinction to the center as a whole. Floodlighting buildings contributes to over-all attractiveness. Lighting is also an effective means of getting attention for special events, such as Christmas, Halloween, Easter, Thanksgiving, etc.

Progressive merchants recognize that well-designed lighting is a sales investment, rather than an operating expense. In addition to its basic function of attracting attention and facilitating quick, accurate appraisal of merchandise, lighting is more and more being employed as an architectural medium to control the character and atmosphere of spaces inside as well as outside the store. Some specific trends to be found in interior lighting are:

1. Higher levels of general illumination—100 and more foot-candles, in specialty shops and self-service stores.
2. More extensive use of incandescent "downlights" in conjunction with light-colored and well-lighted vertical wall and display areas.
3. Better shielding and concealment of light sources—by means of louvers, baffles, recessing—to minimize distraction from merchandise.
4. Larger-scale fluorescent luminaires.
5. More emphasis lighting for the display-and-selling zone.
6. Greater use of colored light for walls and ceilings.
7. Daytime-effective show windows, in which displays are bright enough to be visible despite reflections on the glass. (200 foot-candles or more on vertical display surfaces and spotlighting of featured items with 1,000 or more foot-candles from the newer 300- and 500-watt PAR spotlamps.)

Value of Lighting on Upswing

With the increase in nighttime shopping, both shopping centers and downtown areas are giving more consideration to the attention-getting value of light. Luminous elements and/or floodlighting (filament and fluorescent) applied to store fronts and other vertical areas identify shopping centers and large stores.

High level floodlighting of parking areas for safety and convenience of shoppers contribute to the over-all attractiveness. High mounted equipment (80-100 feet) will find wider use in this area, as well as incandescent, fluorescent, and fluorescent-mercury streetlighting equipment.

The recent tendency towards landscaping, sculpture, etc., in shopping areas is made even more effective at night by new light sources and techniques, in a welcome attempt to make shopping a more pleasurable experience.

PHOTOGRAPH COURTESY OF GENERAL ELECTRIC CO.

Attractiveness and safety is achieved with 400-watt twin mercury vapor lights on a shoppers' parking lot.

Now... for just 24¢

You can make a recorded copy and a microfilm security copy of this 2-sided document

Your recorded copy is made with a Kodak Verifax Copier . . . both sides of any legal-sized document reproduced on a single sheet of paper in less than two minutes. Cost—just 23¢. And you get easy-to-read positive copies.

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Your security copy is made in a Recordak Junior Microfilmer . . . both sides photographed for a fraction of a cent *by simply pressing a button.*

More than 400 four-page instruments can be filed on a 100-ft. roll of 16mm film for fast "fingertip" reference, or low-cost storage in security areas.

Less than $700 for a Verifax Signet Copier and a Recordak Junior. Compare your present costs with that of making Verifax-Recordak copies and you'll see how quickly this small capital expense will be offset. And think what a convenience it will be to get *two complete sets of records in less than three minutes!* *"Recordak" is a trademark*

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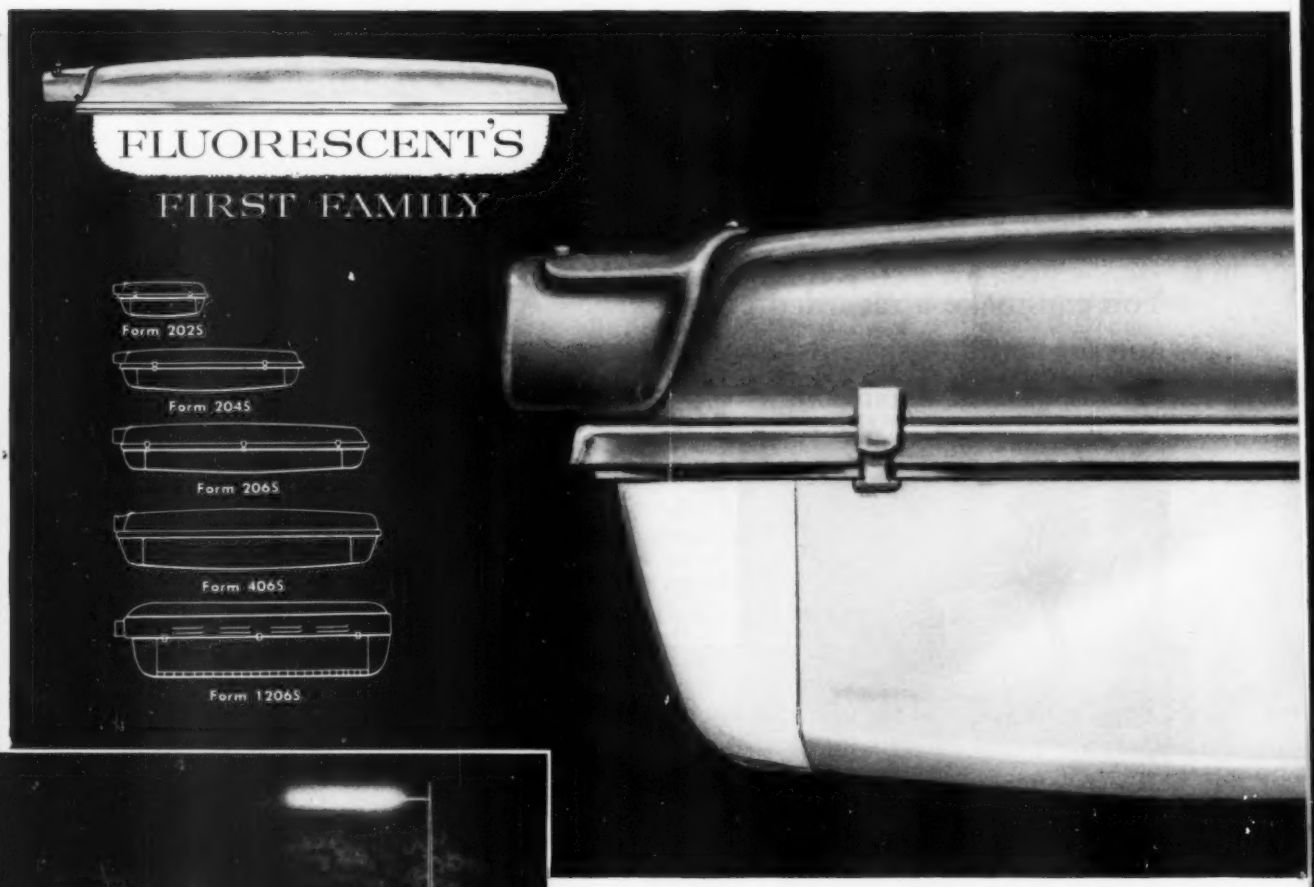
New G-E form 202S Fluorescent

adds safety to residential areas—



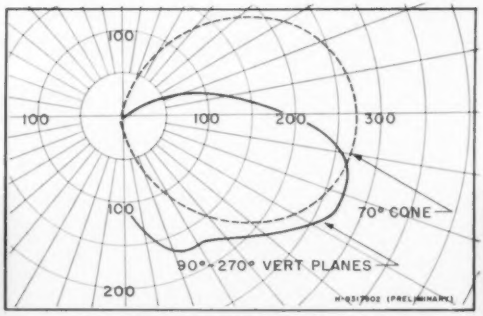
FLUORESCENT STREET LIGHTING promotes safety, better seeing. In addition, when property is lit, residents tend to maintain and improve property appearance, take more pride in the way they live.

The new G-E Form 202S luminaire (2700 lumens) means that now you can bring the assets of main street lighting to the residential areas of a community. Better visibility through fluorescent street lighting makes residential and suburban areas safer and more attractive. Safer . . . because with better seeing, accidents are reduced, people and property are protected—prowlers avoid light. More attractive . . . because the soft, "cool white" light makes seeing more comfortable, increases real estate values, and enhances property appearance.

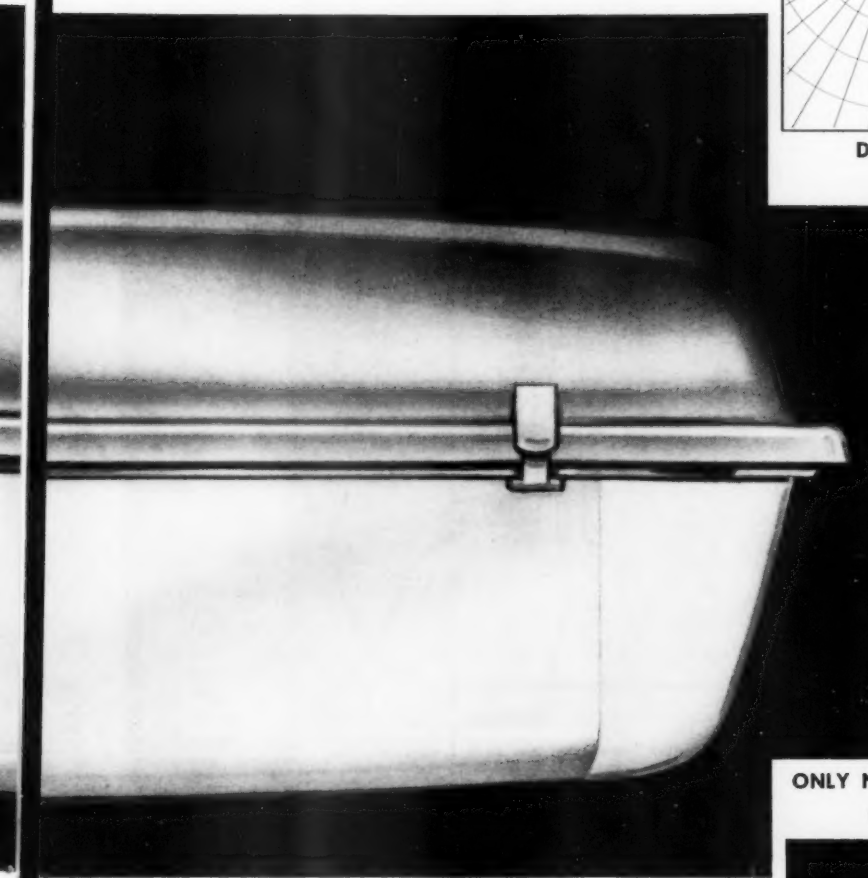
The Form 202S luminaire is another member of G.E.'s revolutionary family of fluorescents, now making it possible to bring all the advantages of this type of street lighting—better visibility, more comfortable seeing, lower maintenance—to every street in the community. It's a development made possible by a coordinated design of luminaires, lamps, ballasts, and brackets for outdoor service. And each member of this family—whether it's the 202S (2700 lumens), 204S (6600 lumens), 206S (10,600 lumens), 406S

Luminaire

increases property values



DISTRIBUTION OF INITIAL CANDLE POWER



(21,200 lumens), or 1206S (64,000 lumens)—contains many new structural design improvements to assure installation, operating and maintenance advantages. Some of these advantages are slipfitter mountings, weatherproof engineering, one-piece side-hinged globe, detachable reflector, pre-wired terminal board, integral ballasts, and new, recessed, double-contact-base lamps.

For more information on the outstanding new General Electric Form 202S or any other member of "Fluorescent's First Family," contact your nearest G-E Apparatus Sales Office, or write Section 452-162, General Electric Company, Schenectady 5, New York.

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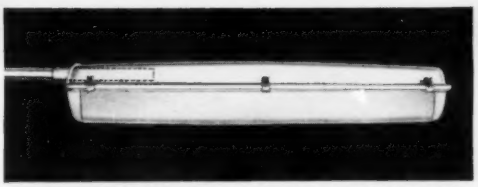
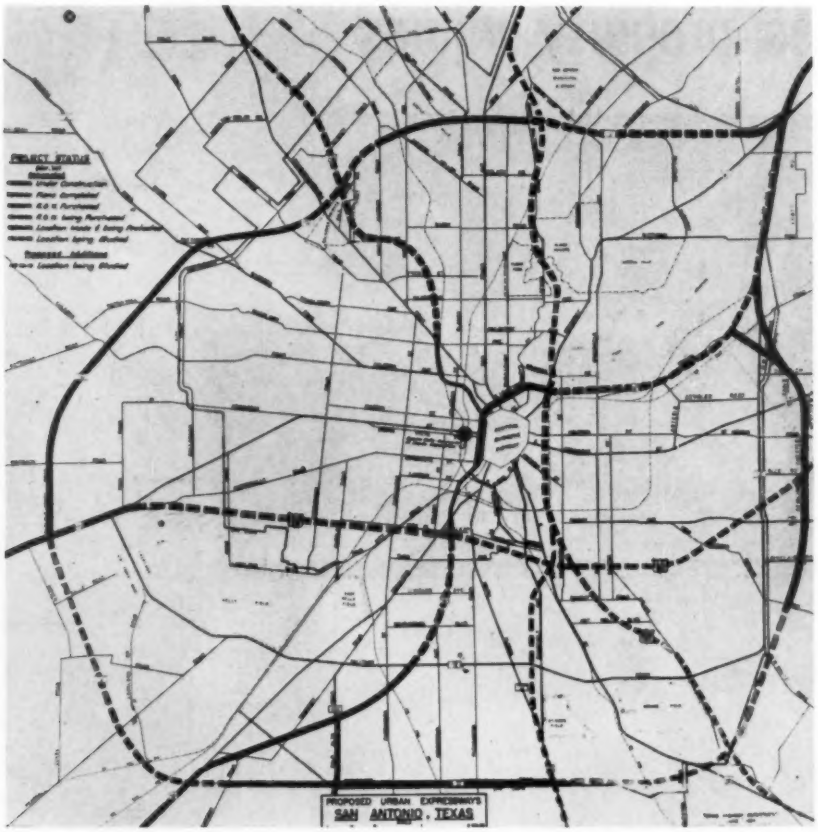


SLIPFITTER MOUNTING . . . pipe bracket slides easily into luminaire, giving perfect support and eliminating heavy, cumbersome clamp brackets. Simple, self-contained, two-bolt adjustment permits fast, easy leveling.

WEATHERPROOF ENGINEERING . . . new, resilient gasketing material between hood and globe provides a uniform, positive seal against all elements. One-piece plastic globe retains clear appearance in all weather.



The freeway plan includes inner and outer loops and the radial expressways.

San Antonio Works for Traffic Improvement

By STEWART FISCHER
Traffic Engineer, San Antonio, Texas

SINCE 1940 the population of San Antonio, Texas, has more than doubled and is now 525,000, while annexation has mushroomed the area from 40 to 154 square miles. This has brought traffic problems to which we have applied remedial techniques used successfully in other cities, as well as innovations of our own.

Steps to improve traffic flow are coordinated by the Traffic Engineering Division of the Public Works Department. This division was established in 1952 with one person; now we have a qualified staff and an operation budget of $350,000.

Shop facilities are now available for silk-screen processes, spray painting, attaching reflective sheeting to sign blanks, and producing hand-lettered signs or art work. Approximately 1,500 miles of lane markings are a part of the program. Traffic signals on outlying major arteries are being equipped with multidial interconnected or with traffic-actuated equipment.

The traffic signal system in downtown San Antonio was installed in 1922. It was adequate then. Today its one method of operation, regardless of the traffic conditions, is wholly inadequate. A new signal system is being provided. The Public Service Board will pur-

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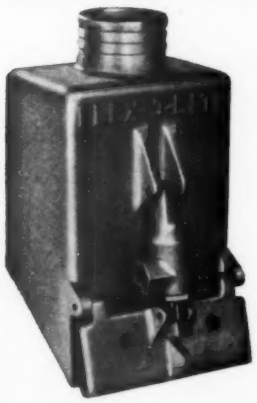

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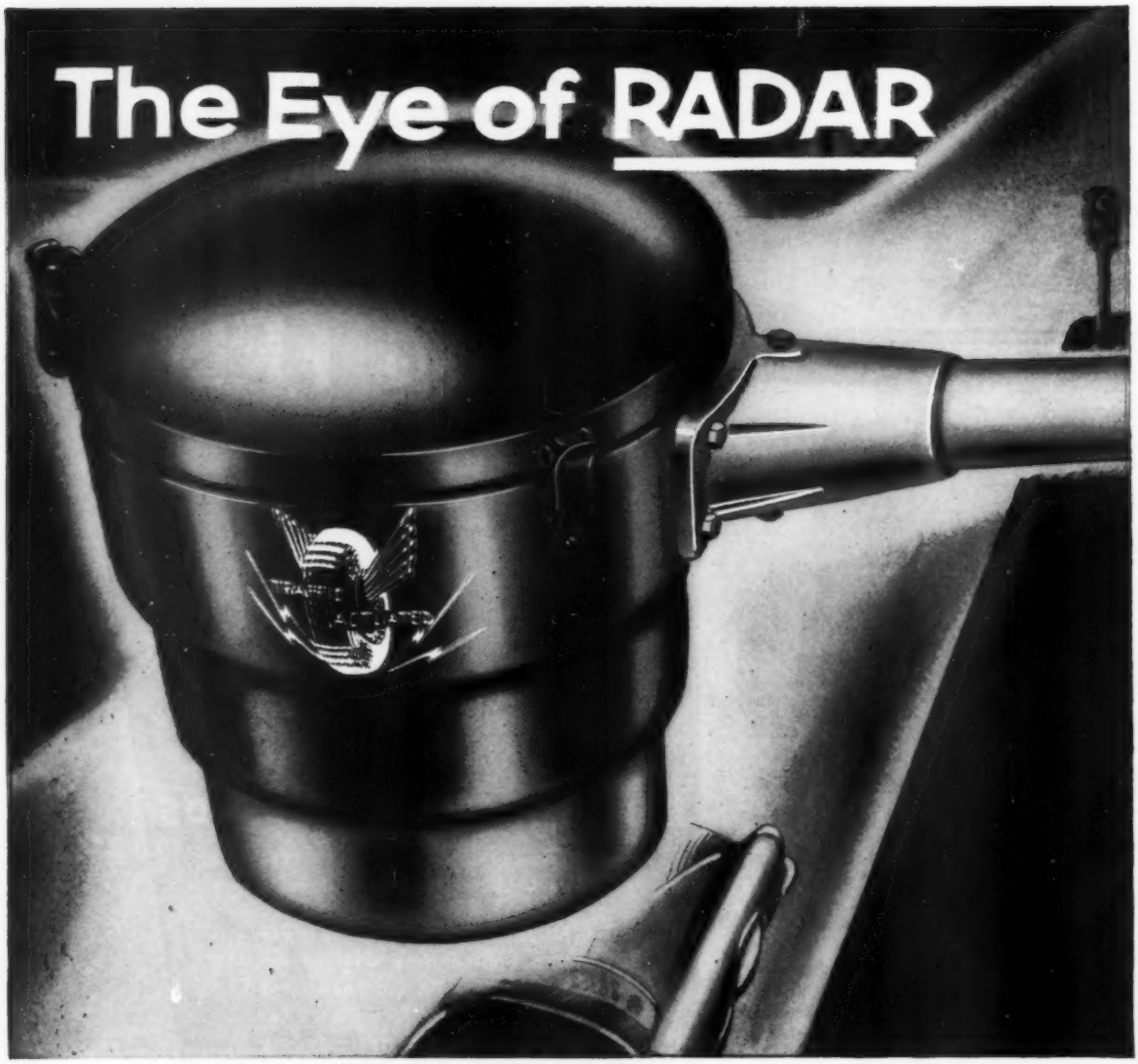

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The Electro-Matic® RADAR VEHICLE DETECTOR presents an entirely new concept in detection for traffic-actuated control. Situated *above* the street, the magic eye of radar operates continuously, unaffected by weather or climate. Completely electronic, it is dependable, accurate, and versatile. With no need for pavement excavation, the Model RD-1 Detector is readily moved or adjusted to roadway changes. It's easily installed on bridges, or wherever installation of regular detectors previously had been difficult.

There *are* many locations where nothing else can do the job as well, or as economically as the RD-1. Write for the copy of the new Radar Detector Bulletin D-154 for details.

AUTOMATIC SIGNAL DIVISION

EASTERN INDUSTRIES, INCORPORATED

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chase and install the system, thus affecting an initial savings to the city of $535,000. The Traffic Engineering Division is responsible for the traffic design and operation of the system.

The new system will be the most flexible type available, utilizing a sampling computer master controller of the type being installed in Chattanooga.* This equipment will continuously sample traffic in the downtown area and will automatically change operation in keeping with traffic demands. By its sampling feature, the equipment will be able to anticipate congestion and eliminate traffic tie-ups before they develop.

Secondary controllers in the San Antonio system will be completely electronic, and will eliminate the old timing motors found in previous systems. Because of the increased flexibility inherent in an electronic system, controllers will be able to perform many more functions than conventional equipment. One of these controllers has available a maximum of 30 different operations as compared with a maximum of nine operations for the older type systems. Another advantage of San Antonio's electronic system is that all of these changes will be made smoothly and instantaneously without any interruption in traffic flow.

Freeway and Street Improvements

Even with the improvement of present traffic facilities, it will be necessary to supplement the existing street system with new construction or major reconstruction of certain streets. A metropolitan area traffic survey, costing $125,000, is being conducted by the City of San Antonio and the Texas Highway Department. This survey will be the basis for determining the location and design of all future traffic arteries.

San Antonio is a highway hub with three interstate and two primary system routes converging upon it. Design and construction of freeways on these routes is done by the Texas Highway Department as a high-priority project. *The freeway program for San Antonio will include an inner and outer freeway loop,* and seven radial freeways extending to the limits of the metropolitan area. The expressway comprising the north leg of the inner loop is now in service, and the western portion is under construction. Funds are available for the southern portion. It is anticipated that this entire ring will be completed by 1959. Portions of the outer ring are under construction and will complete this ring. The outer ring has not been improved to freeway standards along its entire length, but this should be completed by about 1960. Funds definitely are available for an additional $60,000,000 worth of freeway work which will be contracted as soon as plans can be prepared, and right-of-way cleared. The freeway system will provide major relief to the congestion problem.

Last November the citizens voted bond money for a two-year street improvement program. Plans have been completed for 47.5 miles of reconstruction and 17 miles of resurfacing of arterial streets. These projects are designed to make use of proven traffic engineering techniques, such as turning lanes, adequate lighting, and intersection markings.

Texas cities do not have the necessary enabling legislation to permit them to enter into the parking business. This lack makes it difficult to plan for future parking requirements. We intend to use space under the freeway structures for parking, but this will be inadequate. It is doubtful even that this parking will be sufficient to make use of bus service to them.

Adequate street lighting promotes the safe and efficient flow of traffic after dark. San Antonio has had a continuing program of arterial and residential street lighting in conjunction with the City Public Service Board so that today more than half its street mileage is adequately illuminated.* This program will continue until all streets have sufficient illumination, and San Antonio reaches its goal of being America's best lighted city.

Through the coordination of the agencies concerned, progress is being made to relieve the city's most pressing problem. Traffic improvements are reflected in San Antonio's reawakened civic pride, and a surge of municipal strength.

* A similar installation of this computer type made by Automatic Signal Division of Eastern Industries, Inc., was in Chattanooga, Tenn., and was described by Marble J. Hensley, Traffic Engineer, in THE AMERICAN CITY for April 1956, page 149.

* See "Street Lighting Activities in San Antonio," in THE AMERICAN CITY for August 1955, page 145.

Gives Emergency Vehicles Control of Traffic Lights

A Maywood, Ill., fire truck driver flips a switch turning traffic signals red. Equipment consists of a radio transmitter, a radio receiver at each intersection control box, and a special design directional antenna on the vehicle's hood which radiates the beam three to four blocks in advance.

EL-TEC is an electronic traffic-control device which allows emergency vehicles to turn all traffic signals red (Stop) along its route.

The City of ***Maywood, Ill.*** (population 35,000), put an EL-TEC system into operation on May 18, 1955, after losing several thousand dollars in damaged emergency vehicles. Though having only 7,000 registered vehicles within its limits, Maywood has a traffic load of over 200,000 vehicles per day as a result of its adjacency to Chicago Traffic accidents there involving emergency vehicles in the first year were reduced to zero, thereby eliminating injuries to firemen and policemen and damage to the apparatus. This excellent record continues.

New Haven, Conn., installed the necessary equipment for this system in May 1956, according to Mayor Richard C. Lee. It protects 25 fire department ve-

hicles, 20 police cars, and 43 traffic light controlled intersections in the central district. Funds are budgeted for a continuing program reaching outward from the center of town until all intersections and all emergency vehicles are equipped.

Jackson, Mich., recently installed the system, becoming the first city in Michigan to order the equipment following approval by the Michigan State Highway Department. ***River Grove, Ill.***, another Chicago suburb adjacent to Maywood, completed its installation in April 1956. Other EL-TEC equipped communities are ***Highland Park, N. J.*** and ***White Plains, N. Y.***

How It Works

Fire or police equipment on an emergency run will project an ultra-high-frequency radio beam, in the 450 megacycle band, along the route. Without interference to or by other electronic equipment, the beam actuates relays inside the traffic controllers at each intersection. Fire Chief Thomas J. Collins of New Haven points out that the system indicates to one emergency vehicle the presence of a second emergency vehicle approaching the same intersection from another direction. One gets the right-of-way over the other. Accidents occurring in these circumstances have cost life and equipment. Elimination of this hazard alone justifies the equipment, says Chief Collins.

New Haven police department approval was voiced by Chief F. V. McManus, who believes the new electronic protection equipment will save lives as well as protect city property, and afford additional means of controlling traffic in emergencies, including those incident to pursuit of criminals, traffic violators, speeders, and drunken drivers.

Standard Coil Products Co., Inc., Melrose Park, Ill., entered the traffic safety field with the recent cash purchase of the assets, inventory and patents of Electronic Protection, Inc., of Chicago, original manufacturer of EL-TEC, according to James O. Burke, executive vice-president.

Correction

The "Next I.T.E. Officers" given on page 173 of The American City for June were the slate of officers proposed for the Metropolitan New York Section of the Institute of Traffic Engineers, and not the national candidates to be voted on at the annual convention September 24-28 in San Francisco.

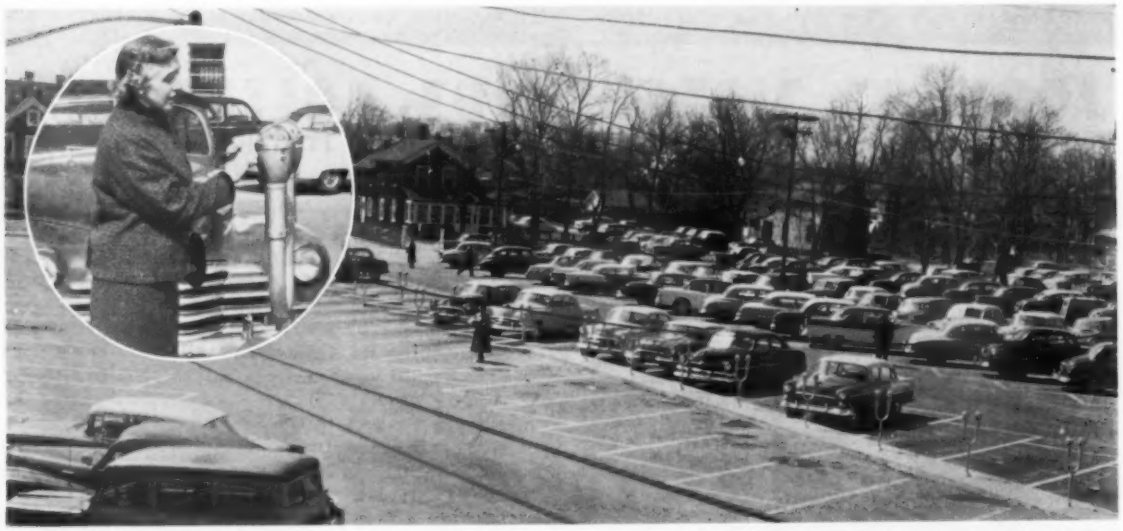
Metered Lot Parking In Patchogue, N. Y.

OUR new metered parking field in the first 13 weeks of operation took in $305.36, or 75 cents per meter per week, at a penny for 24 minutes or a nickel for 2 hours. Since the rate in the field is half that of the curb, it would appear the meters in the parking field seem to be receiving almost as much use as those at the curb which average $1.72 per meter per week.

This field cannot be used by merchants and their employees. All free parking fields are filled almost to capacity with these business people. At the metered field the turnover is good and spaces are usually available.

Receipts for the year should run $5,000. One-half of the receipts must be used to pay for the meters; the other $2,500 will pay the cost of construction of the $10,000 field in four years.

WILLIAM W. PARROTT
Village Manager, Patchogue, N. Y.



It is 10:30 a.m., Saturday, April 14, 1956. The scene is the new Patchogue, N. Y., parking lot, which is equipped with twin Duncan Automation meters. Mrs. Jane Zieman (insert) is investing either a penny for 24 minutes or a nickel for 2 hours.

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For more than twenty-eight years, municipal, county, and state governments have used Hypressure Jenny Steam Cleaners to make tough cleaning jobs easy, cut labor expense, and improve the effectiveness of their maintenance programs. Here are just a few of the many jobs which Hypressure Jenny will do *ten times faster* and better than any other method, to reduce your maintenance overhead:

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- **Clean Bar Screens . . . Chambers . . . Sewers and Trucks in Sewage Treatment Plants**

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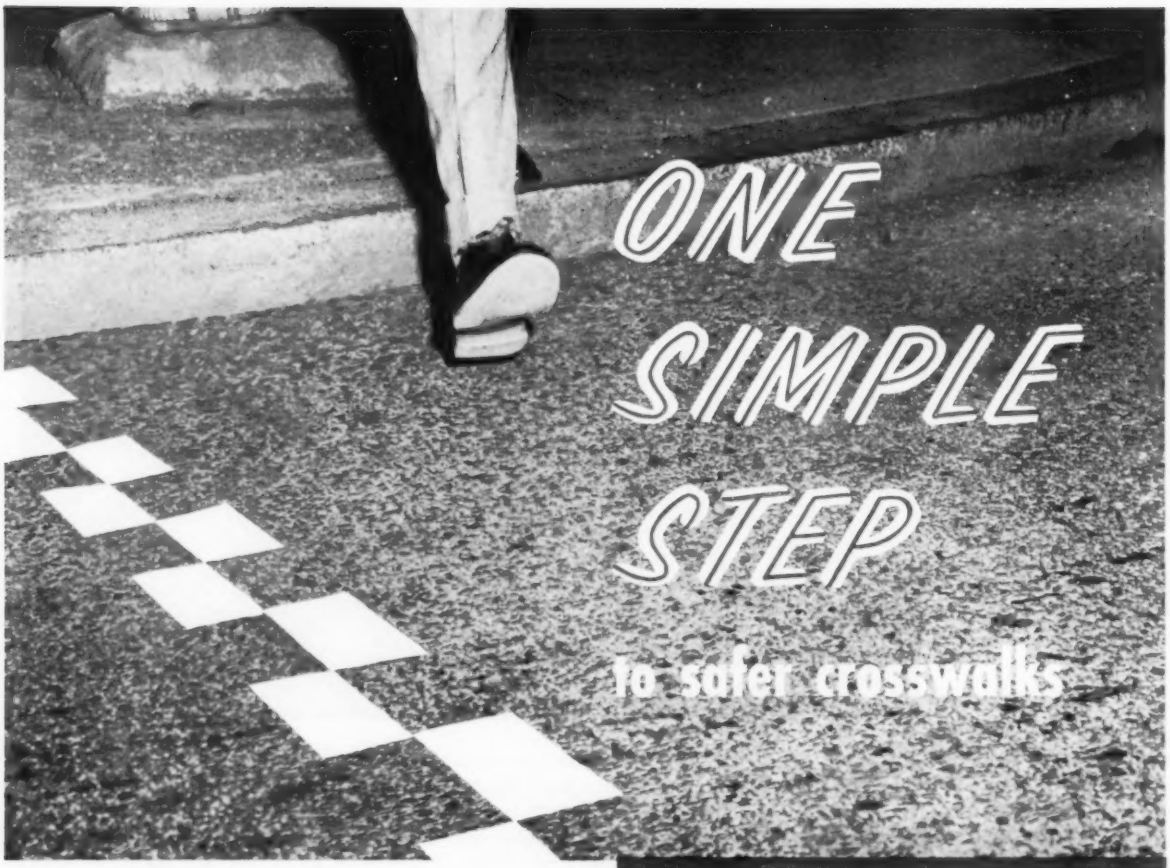


It's easy and amazingly low-cost to install Plastix, the permanent type reflective material, on your crosswalks and safety zones.

For the traffic engineers or municipal officials looking for a way to lower their pedestrian accident rate without the high cost of continued applications of paint, here is an answer that's made to order. Plastix is an extruded thermo-plastic material heavily impregnated with minute, perfect spheres of glass. When applied to the pavement with special adhesive, it forms an indestructible bond with the surface of the street, which can be opened to traffic immediately after installation. Continued pounding of vehicles soon causes Plastix to actually become a part of the street surface itself, and it responds readily to surface changes rather than chip or peel.

Available in squares, strips, dots and Legends, Plastix is quickly and easily applied in any of a variety of patterns. Moreover, its reflective usefulness lasts for many, many years. Take an important step toward safety. Write for information today. Ask for Prismo bulletin No. PX.53.

Have you heard about Prismo '200' hi-reflective finish, the most versatile reflective sign material ever created? Write for bulletin No. P256.

PRISMO PLASTIX

PRISMO
SAFETY CORPORATION
Huntingdon, Pennsylvania

Meter-Repair Shop on Wheels

Here's Howard Campbell, who keeps the 630 Duncan Miller Parking meters of Anderson, S. C., in repair. Most of the repairs are made with tools carried by the Harley-Davidson three-wheel motorcycle. Technician Campbell says that putting him on wheels has cut meter repair time in half.

* * *

ACTING on the Traffic and Safety Commission's recommendations, the City Council of Lakewood, Calif., installed automatic signals at 5 intersections, and installed 25 boulevard stop signs, 80 crosswalks and 13 new crossing guards, and approved an electronic control system for Lakewood Boulevard.

* * *

ALMOST 60% of cities with a population of over 10,000 own and operate one or more off-street parking lots. The number is up about 4% over 1954. The 675 cities reported to the International City Managers' Association that they operate 2,397 lots, an average of 3.5 a piece. The median number of parking spaces was 250. As to charges, 273 charge for the use of all lots, 178 charge on some and not on others, and 219 (mostly 10,000-25,000) allow free parking on all their lots.

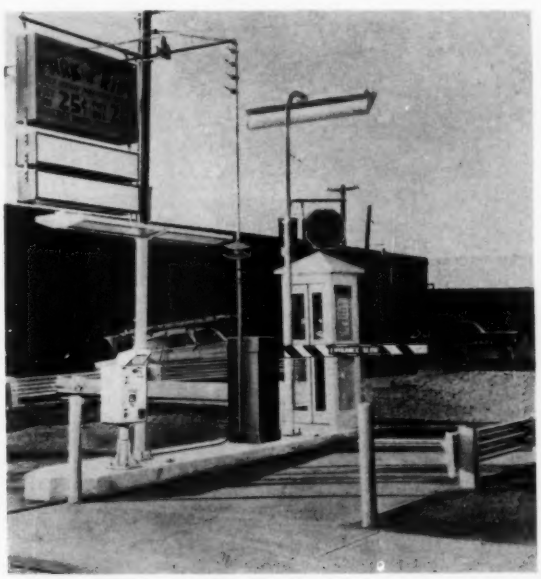
Week's Course in Traffic Engineering

A TRAFFIC engineering course at Purdue University, Lafayette, Ind., to be held August 6-10, will teach "Engineering Aspects of Traffic Operation." It is for civil engineers from Indiana and nearby states who want to get the most efficiency from their street systems. The course is a model for possible nationwide application.

Instructors include Professors Don Berry and Harold Michael of the Joint Highway Research Project, Purdue; Professors Fred Hurd and Tom Seburn of the Yale University Bureau of Highway Traffic; Norman Kennedy, associate research engineer of the University of California; George Barton, traffic consultant at Northwestern University; Professor John Baerwald of the University of Illinois, and Carlton Robinson, traffic engineer of the Automotive Safety Foundation.

Further information may be obtained from Professor Don Berry, School of Civil Engineering, Purdue University, Lafayette, Ind.

Portable Gates That Talk



Parking gate on portable base and equipped with speaker.

SHOWN here is a gate of PARK 'N RIDE self-service carpark lot in Covington, Ky. The lot was set up for the convenience of bus commuters to Cincinnati. The commuter, on payment of a quarter into the coin-operated Western Railroad Supply gate installation, gets in return one free bus token for the ride into Cincinnati's Dixie Terminal and admission of his car into the lot. On his return to the lot, the commuter pays a quarter, or two bus tokens, before the automatic gate allows his car to depart.

The concrete island on which the gates are mounted is preformed and portable. This eliminates high installation costs and simplifies movement if and when the lease expires. A second innovation is a loud speaker which delivers a recorded message to each inbound customer when coins or keys actuate the remote control. The message instructs the commuter on locking his car, using his free token for the bus ride, and on where to board the express bus to Cincinnati from the Covington terminal one block away.

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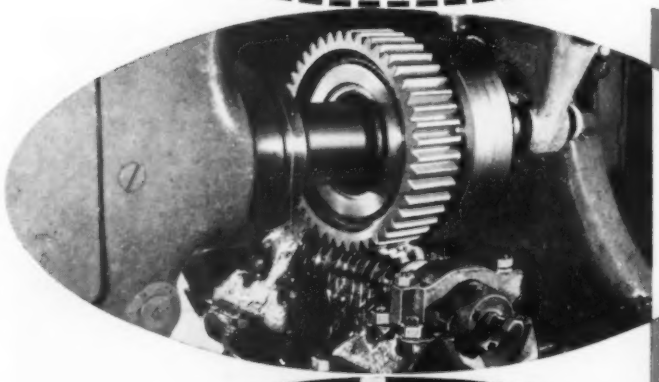

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Upgrade Your Weights and Measures Department

Popularizing local weights inspection activities is essential if the public is to be better protected from weight errors in the future

By HOWARD CRAWFORD
Chairman, Education Committee
National Conference on
Weights and Measures, and
Weights and Measures Inspector
Jacksonville, Fla.
and
ARTHUR SANDERS
Executive Secretary
National Association of
Scale Manufacturers, Inc.
Washington, D. C.

Spring scales, used to weigh produce in a supermarket, are checked for accuracy by a District of Columbia weights and measures inspector.

THE weights and measures inspector of any city or town is often the least known and appreciated of all local officials. With few exceptions, if the average man on the street were asked who directed these activities in his home city and what his job entailed, he would be unable to answer.

Although rarely before the public eye, the work of the weights and measures inspector is significantly important to the local citizen whose food and fuel bills (among others) are governed by the accuracy of the scales and other devices that measure out the quantities of his purchases. John T. Kennedy, Chief of the District of Columbia Weights and Measures Department, estimates that the average family of four in a metropolitan area has a stake of about $100 a year in the accuracy of the devices that weigh the products it buys. In describing the mechanics of an individual loss, Mr. Kennedy told District of Columbia residents recently, "Suppose you are buying two pounds of steak at $1.20 a pound. If your purchase is two ounces underweight, you've lost over 15 cents on the transaction. If it is two ounces overweight, the merchant has lost 15 cents."

If you multiply that sort of error by the millions of purchases made annually in the District of Columbia, you run into big money indeed.

All of this adds up to the fact that the weights and measures inspector in your city government is an important official who deserves a solid body of public opinion mobilized behind him.

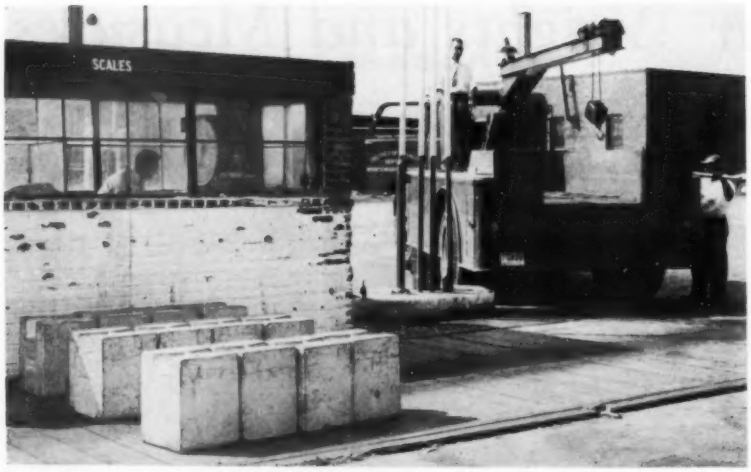
Weights and Measures Today

Today throughout the country there are an estimated 3,000 municipal, state, and county weights and measures officials. According to William S. Bussey, Chief of the Office of Weights and Measures in the National Bureau of Standards, about a third of these officials are on municipal payrolls; the rest are distributed among state and county offices.

Within urban areas, the organization of weights and measures activities varies considerably, depending primarily on the stringency of state legislation plus the size of the population to be served. In Maine, for example, state law requires each municipality to have an official "town sealer" who approves (with appropriate seals) the scales and other measuring devices that he must inspect. However, because most Maine towns are small—populations of 2,000 and 3,000 are common—the sealers are generally part-time men who carry on their own local businesses or who serve in other capacities in the local government. On the other hand, the Los Angeles County Weights and Measures Department, which is generally regarded as among the best in the country, has a staff of 90 full-time technicians to serve not only Los Angeles City but the heavily populated county surrounding it.

How does a typical weights and measures department work? For an example, let's take the case history of the District of Columbia Department headed by the previously quoted John Kennedy.

Mr. Kennedy has a staff of 12 in-



Thousand-pound test weights are used to test large scales such as this for weighing motor trucks. Special trucks and cranes are necessary to place the weights on the scale platform.

spectors and two supervisors. Besides checking the scales in the approximately 3,500 grocery stores in Washington twice a year, Mr. Kennedy's people must inspect thousands of other scales scattered in other stores and offices. These others range from the huge truck scales capable of weighing up to 125,000 pounds to the delicate balances used by pharmacists to fill medical prescriptions. On the latter, by the way, the weight of a fly would be large, indeed.

In addition to the twice-a-year checking schedule for all scales, unannounced spot checks are made at frequent intervals. Thus warehouse, person-weighing, and hundreds of other types of scales are under constant test. In the District of Columbia, the required accuracy for scales that weigh items to be sold is 0.1%.

In addition to scale-checking, the District of Columbia Weights and Measures Department has "shoppers" (or people unknown to merchants) who make spot purchases at stores regularly. The purchased goods are then taken back to the department's offices and checked to see that both the weight and computed price are correct. If they are not, the seller gets a warning from the department. Repeated offenses make him liable to legal prosecution by the city and a possible fine and jail term.

Tools of the Trade

The tools of the inspector's trade are a series of carefully machined test weights whose accuracy is the pride of the weights-and-measures profession. These standards, as they are called, are manufactured by firms such as the W. and L. E. Gurley Company of Troy, N. Y., and the Exact Weight Scale Company, Columbus, Ohio. Their accuracy is checked constantly, through a hierachy of other standards, against the nation's most accurate test weights which are kept in temperature-and-humidity-controlled conditions at the National Bureau of Standards' laboratories in Washington. For example, the accuracy of municipal test weights are compared regularly against the accuracy of state standards, and the state standards, in turn, are compared with the highly accurate ones kept in Washington.

The Scales

As weights and measures inspectors are quick to point out, weighing errors do not necessarily imply any dishonesty on the part of anybody. The problem lies basically with the scales themselves, for they are unusual among business machines in that they may give correct readings for months and then gradually become increasingly inaccurate from wear. Because they need to be watched so closely, scales are poor risks against physical damage. They are so poor in fact that bonding companies refuse to shoulder the loss that a scale can cost its owner.

But in spite of the generally honest conditions that weights inspectors find, they occasionally come across a black sheep who will stuff a frozen chicken with ice or inject it with a syringe full of water, to use two examples. In such instances, the inspector investigates all complaints and prosecutes the offending parties with all the police powers at his command.

Despite the rapid population growth occurring in cities and towns throughout the country, and despite the importance of weighing and measuring devices, inspection activities have grown little in the past few years. It is true that existing gaps in state legislation have been closed. For example, seven years ago, 10 states lacked effective controls over weighing and measuring devices. Now the number has been whittled down to four.

But despite this improvement, William S. Bussey, who doubles as both chief of the Federal Office of Weights and Measures and Secretary of the Annual National Conference on Weights and Measures, predicts little future growth for the inspection profession if a greater understanding of the needs of these activities is not created. He points out that unless the number of inspectors increases in proportion with population growth and business activities, the public will be less effectively protected against weighing errors in the future than it is now.

Do You Know?

Frequent inspection of weighing and measuring devices, and of packages offered for sale, is the heart of weights and measures. A good law, without adequate enforcement, merely begs the question. Weights and measures is a service to the public and business, recognized as such since the dawn of history. With all the protection government service furnishes, it can be had at very low cost. For example, in its annual report for 1955, the City of Rochester, N. Y., noted that weights and measures enforcement cost only 14 cents a person.

Seeking to overcome the lack of information about the function of weights and measures departments, the National Association of Scale Manufacturers and the Education Committee of the National Conference on Weights and Measures have undertaken a joint program whose object is to educate public officials as well as the man in the street on the key role of municipal weights and measures departments.

These two groups are sponsoring a model law on weights and measures which recommends such standards as one full-time sealer for every municipality having a population of 30,000 or more. In addition, the model law prescribes that in areas

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Power in the front drivers makes it safe to work along the top of a steep bank.

The teamwork of All-Wheel Drive and All-Wheel Steer makes the grader as sure footed as a mule.

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All-Wheel Drive, All-Wheel Steer work together . . . doing things impossible for ordinary graders

Graders with rear drive only have to push the lazy, dead weight of the front end, which requires extra power and thus lowers the operating efficiency. Put power on the front wheels and you get *working* weight—not *dead* weight. Then all weight is on driving wheels, contributing 100 percent to traction.

All-Wheel Steer makes Austin-Western graders twice as maneuverable as those with front steer only; steering that lets you "swing that rear-end" for handling every job with maximum efficiency.

All-Wheel Drive for maximum mobility and 30 percent more Power-at-the-Blade—power that is made still more effective by Torque Converter drive. All-Wheel Steer for extreme maneuverability. Put them together and you have teamwork that keeps Austin-Western Power Graders working where other graders fail. Austin-Western Works, Construction Equipment Division, Baldwin-Lima-Hamilton Corporation, Aurora, Illinois.

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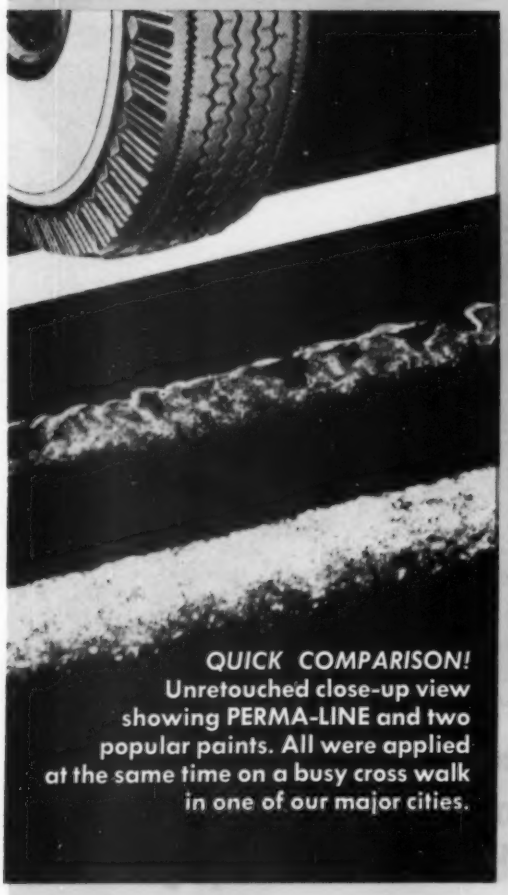

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of larger populations, weights and measures departments be staffed at the standard of one employee for every 50,000 people. Copies of the model law can be obtained without cost from the National Bureau of Standards, Washington, D. C.

The committee has also developed a series of publicity aids designed to show weights and measures people and other municipal officials how to prepare press releases, simple radio and TV scripts, and other material that will disseminate information about weights---and---measures activities.

All eyes in the weights-and-measures profession are watching the development of this program. They are confident that the crises that could develop from declining inspection standards caused by lack of public support and understanding—can be avoided and a free growth of the profession can be promoted.

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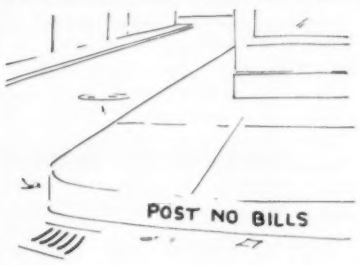


Community House Wins Design Award

PARK RIDGE, Ill., was honored last month by the Chicago Chapter of the American Institute of Architects and the Chicago Association of Commerce and Industry for the superior design of its one-year-old West Park Community House.

First opened to Park Ridge residents last August, the modern recreation building houses a broad range of recreation facilities, including twin swimming pools and a variety of meeting rooms, in a structure that has attracted widespread attention for its excellent design. The honor award was presented to William A. Jackson, president of the Board of Commissioners of the Park Ridge Park District, at the second annual Civic Pride Luncheon, sponsored jointly by the commerce association and the architects. Architect for the Park Ridge building was Ralph Stoetzel, Sr.

The civic pride awards are presented annually to focus public attention on buildings and projects which contribute significantly to the creation of a new and efficient physical setting for modern life in the Chicago metropolitan area. Among other public facilities receiving design honors at the luncheon were four public parking areas built by the City of Chicago and the Highland Park (Ill.) High School.

EDITOR'S NOTE: See "Planning a Park and Recreation Center," pages 88-90, December 1955 issue of THE AMERICAN CITY, for a detailed description of the Park Ridge Community House.

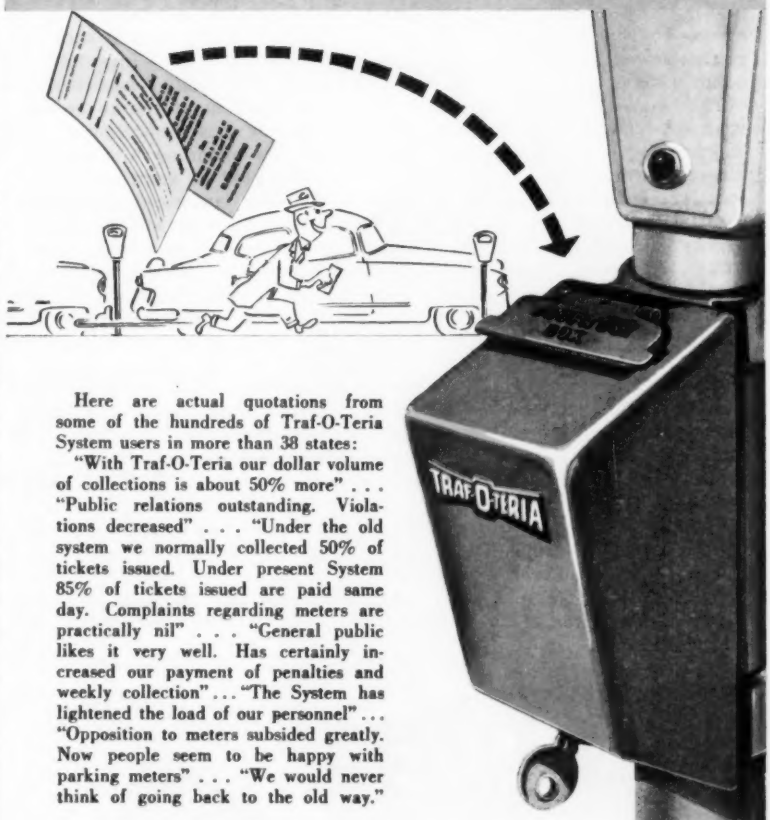
Radioactive Isotopes to Trace Los Angeles Sewage

RADIO ISOTOPES found peaceful use last month when engineers employed them to trace sewage effluent flowing into Los Angeles' Santa Monica Bay. This is believed to be the first time they were ever used for such a purpose.

The unusual application was part of the oceanographic studies currently being made to insure against beach pollution when the enlarged, modified plant goes into operation. The radioactivity in the sewage plant effluent, even at the point of introduction into bay waters, was substantially less than the concentration permitted for drinking water as established by the National Bureau of Standards.

Use of the radioactive tracer, measured by highly sensitive monitoring equipment, permitted scientists not

Collect More Fines



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"With Traf-O-Teria our dollar volume of collections is about 50% more" . . . "Public relations outstanding. Violations decreased" . . . "Under the old system we normally collected 50% of tickets issued. Under present System 85% of tickets issued are paid same day. Complaints regarding meters are practically nil" . . . "General public likes it very well. Has certainly increased our payment of penalties and weekly collection" . . . "The System has lightened the load of our personnel" . . . "Opposition to meters subsided greatly. Now people seem to be happy with parking meters" . . . "We would never think of going back to the old way."

The Traf-O-Teria System provides the missing elements you need to complete your metered parking control. It helps to discourage violations and produces more revenue — in a way that wins public support and endorsement. It affords polite, considerate enforcement . . . removes the "branded as a felon" feeling that antagonizes many good citizens. It speeds and simplifies ticket issuance and accounting . . . eliminates the evil of "ticket fixing." It adds the final touch of thoughtfulness that wins hearty community approval for your parking control methods.

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only to follow the sewage field accurately as it diffused through the ocean, but also to determine dilutions hitherto unmeasureable by conventional means.

The tracer studies further showed that dye patches and float studies, also used in the experiment, are not always reliable indicators of the direction sewage travels after entering ocean waters.

The nuclear tracer experiments were conducted jointly by Hyperion Engineers, Nuclear Science and Engineering Corporation of Pittsburgh, Pa., Hyperion plant personnel, and the Hancock Foundation of the University of Southern California. The radioactive material used was Scandium 46, a tracer with a short half-life, and relatively low cost. It was obtained from the Oak Ridge National Laboratory.

The Los Angeles Hyperion sewage treatment plant is scheduled for additions and improvements estimated at $40,000,000. The work is being designed by a group of consultants participating as a joint venture under the name of Hyperion Engineers. The companies participating are Daniel, Mann, Johnson & Mendenhall; Holmes & Narver, Inc.; and Koebig & Koebig, all of Los Angeles.

Planning and Redevelopment Terms for Citizens

By-Pass—A street or highway designed to carry traffic around, rather than through urban areas or congested centers.

City Planning—The arrangement of the physical elements of a region or a city, so that each will contribute to the economical, efficient, healthful, and agreeable development of the entire area. The six most important aspects of city planning are generally designated as: engineering, architectural, landscape architectural, economic, legal, and sociological.

Civic Center—The grouping or bringing together in one well-defined area of public buildings that provide the facilities for and serve the needs of the entire community.

Conforming—Utilization of land and buildings as prescribed in a zoning ordinance for a particular section of a municipality.

Crosstown—A major street connecting the secondary points of the urban area which goes around, rather than to or from the heart of the city.

Director of City Planning—The full-time salaried professional employee responsibile for the implementation and administration of planning programs and policies adopted by the governmental unit's legislative body and the planning commission.

Expressway—A major highway designed to permit easy and fast access to and from the outside limits of a community to its center.

Freeway—A major highway designed to separate, through high speed, noncommercial motor vehicle traffic from all other types by use of separate traffic lanes.

Housing—In general, referring to all residential dwelling units, whether privately or publicly owned.

Land Use Map—A map which clearly indicates for what purposes the physical assets of a community are being employed and also a map which designates for what purposes land areas may be employed on the basis of zoning regulations.

Limited Access—In the design and construction of a major highway, the exercise of a regulatory control over the abutting property,

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ONE WAY / SLOW — BIG 18" x 24" One Way arrow signs. (Specify direction). In lots of six or more . . . $2.60 ea. 24" Diamond Warning Signs . . . In lots of six or more . . $3.20 ea.

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Place anywhere needed
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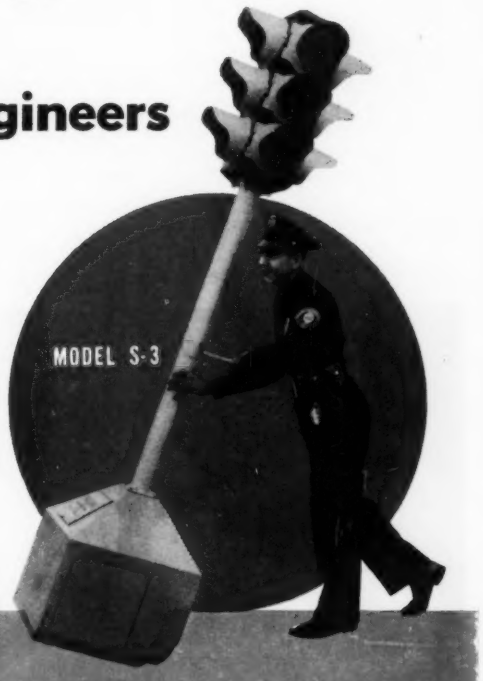

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✓ **CHECK THESE SPECIFICATIONS**

✓ **BASE:**
16 gauge steel, access doors; contains battery and automatic battery charger; automatic control unit with finger-tip cycle adjustment.

✓ **HEIGHT:**
8' to bottom of green lens, 10¼' overall; higher if desired.

✓ **HEAD ASSEMBLY:**
Of sheet aluminum, I.T.E. standard lenses; Alzak aluminum reflectors, 12-volt traffic signal standard screw base bulbs.

✓ **BATTERY:**
12-volt, 153-ampere-hour 3-year guarantee; two 20-volt a.c., or d.c. if preferred.

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so as to determine where and when traffic will enter, exit, or stop while using the road.

Master Plan—A comprehensive city plan which is first, a balanced and otherwise attractive general design, suited to both the present and probable future needs of the community; second, is developed in relation to the population and economic prospects of the community; and third, is developed in relation to its financial resources, present and prospective.

Metropolitan Area—A county or group of contiguous counties which contains at least one central city of 50,000 inhabitants or more.

Metropolitan District—An organization composed of a number of contiguous municipalities which have banded together to perform one or more governmental functions throughout a service area, without regard for political boundary lines.

Non-Conforming—Utilization of land and buildings contrary to the legal provisions established in the zoning ordinance for a particular section of a municipality.

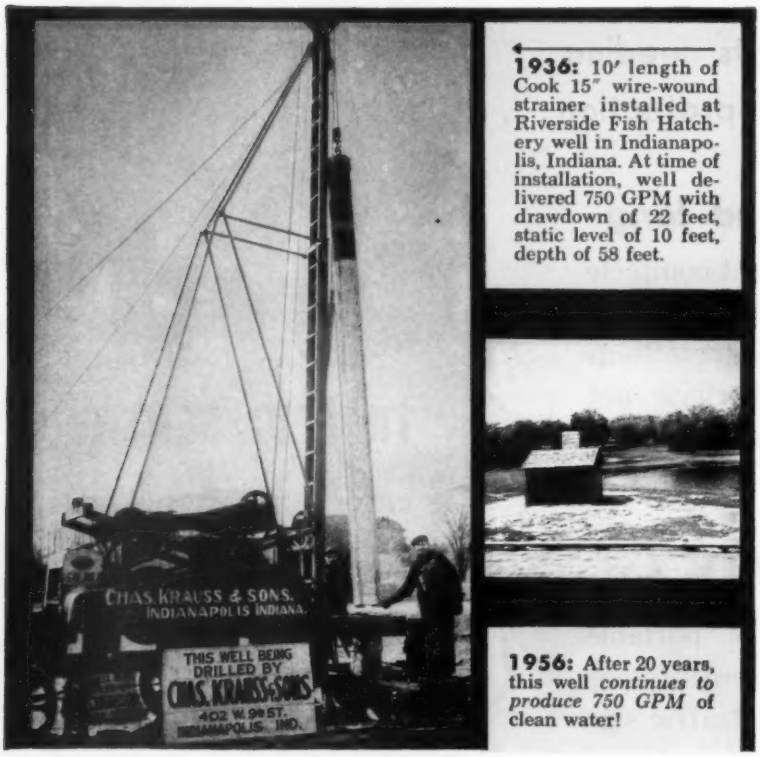
Origin and Destination—Where traffic comes from and where it is going.

Park—Large area designated for less intensive recreational activity than the above two, although it may include both of the above types, plus additional acreage for such activities as picnicing, hiking, bicycling, and horseback riding.

Planning Commission—A representative body of public-spirited citizens, usually non-salaried, whose responsibility is to develop policies in regard to all facets of the governmental unit's planning program and to advise the director of planning in the preparation of specific programs for eventual presentation to the official legislative body of a community. Customarily, the chief executive of a governmental unit and at least one member of the legislative body serve as ex-officio members.

Planning Consultant—A technically proficient individual, with extensive experience in the field of community planning, hired by a municipal government to supplement and advise the existing planning staff of the governmental unit, or where no permanent staff is employed, to serve on a temporary basis as the professional staff.

This is the second of a series of planning and redevelopment terms; the first appeared on page 193 of the June issue. Reprints of the complete series will be available without charge in quantities of 10 or less.



1936: 10′ length of Cook 15″ wire-wound strainer installed at Riverside Fish Hatchery well in Indianapolis, Indiana. At time of installation, well delivered 750 GPM with drawdown of 22 feet, static level of 10 feet, depth of 58 feet.

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20 years of trouble-free service proves superiority of Cook strainers!

You can get this kind of long-pull dependability by installing Cook Well Strainers in your next job. They're manufactured with Cook's exclusive, V-shaped, self-cleaning slot that eliminates clogging yet delivers maximum GPM at all times. Meet your requirements with your choice of wire-wound or brass tube types . . . with slot sizes ranging from .006″ to .25″. Choice of metals includes Red Brass, American Everdur Bronze, Armco Iron or Stainless Steel . . . with 8 to 24 hour delivery possible in most cases.

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Recommends Special Neighborhood Designs When Planning Housing for Elderly

A PLEA to restore aged persons to a more normal community life was entered in the May issue of *Architectural Record* by Lewis Mumford in an article, titled "For Old People —Not Segregation But Integration."

According to Mr. Mumford, the segregationist approach, which has forced aged persons into special homes or institutions, has condemned senior citizens to live out their years in a soporific routine of isolation, loneliness, and idleness, thus accelerating the processes of deterioration.

"To normalize old age, we must restore the old to the community." Mr. Mumford would do this by creat-

(Continued on page 178)

HUBER-WARCO MAINTAINER

Helps put *Profit* in variety of jobs

An All purpose— year 'round performer

The Huber-Warco M-52 Maintainer is truly a sensational performer for a wide variety of construction and highway maintenance problems. It will out-perform many machines that are larger, heavier, more costly, slower, more expensive to operate, and more limited in use.

Application of a torque converter reduces shock loads and prolongs the life of the machine. Loads are picked up and carried smoother and faster. Vehicle speed is automatically adjusted to meet load conditions. Wheel slippage is reduced, and the engine won't stall regardless of grade.

A 45½ H.P. engine gives the Huber-Warco Maintainer plenty of reserve strength for the toughest jobs. The unit weighs 6250 lbs. (7205 lbs. with calcium chloride in tires) — enough weight for all maintenance jobs.

With hydraulically controlled attachments, the Huber-Warco M-52 Maintainer will perform service as a bulldozer, lift-loader, side dozer, berm leveler, broom, patch roller, mower or snow plow.

Adding to the efficiency of the Huber-Warco Maintainer is a 9 ft. power sliding moldboard. Easy to reach controls reduce operator fatigue.

Working speeds of the Huber-Warco Maintainer range from 1.7 to 8 m.p.h. Travel speed is 21 m.p.h. for quick movement from job to job.

Get the Important Facts

For complete information, including specifications for the Huber-Warco M-52 Maintainer, and the hydraulically controlled attachments, write for your free copy of Bulletin HWM-512 today.

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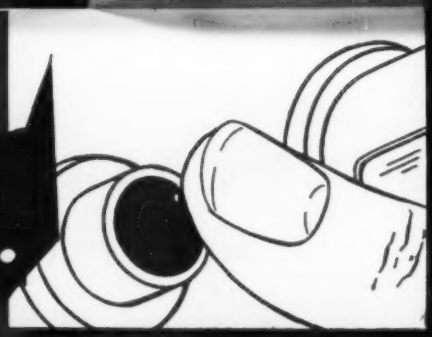

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Try seconds-fast crawler starting. Famous International gasoline conversion, *in-seat* starting is *standard equipment* in all International diesel models! You get fast, positive, all-weather diesel starting, without *fooling* or *fouling!*

Try the lever-pull ease and power-transfer efficiency that new International Cerametallic engine clutch facings give you. And these self-cooling, long-lasting facings are of long-proved, well-known dry-type clutch design. No mystifying seals, circulators or "cold-sensitive" liquid to live with!

Try new International crawler steering. Unrivaled TD-24 Planet Power steering with capacity-boosting power on both tracks is responsive to even a schoolboy's finger-tip touch! New hydraulic booster steering, in the new TD-18 and TD-14, reduces steering lever pull a big 75%. And the new T-6, TD-6, and TD-9 with spring-type steering clutch boosters are 25% easier to steer!

Above all, load up a new International crawler with matched International equipment—prove how bonus-powered performance boosts profit-production, wins operator preference, simplifies servicing. Choose from 7 heavy-duty crawler models, 41.5 drawbar to 200 net engine hp. Have your nearby International Distributor show you the bonus-powered performance package you need! Get a demonstration on your job today!

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- CATALINE REFLECTIVE STRIPING
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When Planning Housing for the Elderly

(Continued from page 174)

ing new neighborhoods in which elderly persons would live side by side with families, neighbors, and friends, and participate in the normal activities of a mixed community.

Such a neighborhood would maintain a normal age distribution; that is, with five to eight persons over 65 years of age to every hundred people. Large-scale housing projects specially designed for the aged would be avoided in order to prevent an upset of this population ratio. Instead, Mr. Mumford suggests that elderly persons be housed in lower floor apartments in two- or three-story buildings whose upper floors are occupied by childless people in other age groups. These apartments would be grouped in small units of from six to a dozen in order to retain a reasonable degree of closeness among the old folk. Groupings of this number would, according to Mr. Mumford, follow the old monastic rule that 12 members make an ideal social unit: more than 12 would require too much regulation, while, in a group of less than 12, a single cantankerous individual might very well produce a disruptive effect.

Mr. Mumford makes the worthwhile observation that young children under six and seven and old people share many of the same needs. Accordingly, a community should plan for the protection and care of both these age groups.

For example, both need to be guarded against vehicles and long climbs. Thus the buildings containing apartments for elderly persons would be so located as to provide ready access to all community services such as the shopping area, library, churches, and community center without requiring the climbing of steps or the crossing of heavy traffic.

Further Recommendations

Mr. Mumford also recommends the construction of covered ways between buildings housing the aged since such arcades would facilitate visiting in bad weather and also serve as sheltered places for chatting and sunning. In addition, there should be a nursing home in the neighborhood, which could give medical care to the aged and even to the community as a whole without requiring the expensive services of a hospital.

"What the aged need are activities" and a mixed community would provide them with opportunities for voluntary or paid service. For instance, they could take up gardening or babysitting, make toys or help repair home fixtures, thus bestowing satisfaction on themselves and on the community.

As Mr. Mumford sees it, "the problem of housing the aged is only one part of the larger problem of restoring old people to a position of dignity and use."

Bold Federal Housing Legislation Closer

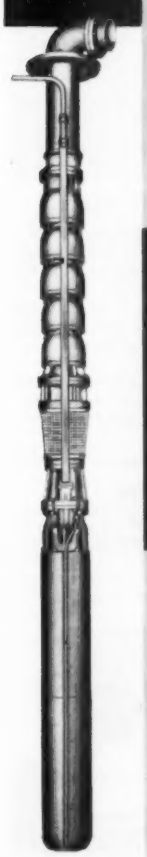
AN EXPANDED federal housing program moved closer to enactment last month when the House Banking Committee approved a bill calling for the construction of 60,000 units of public housing per year for the next three years. Previously, by a vote of 41 to 38, the Senate had passed its own housing bill permitting an even greater annual construction figure. The Senate version of the 1956 housing legislation calls for a grand total of 500,000 units to be built at a basic rate of 135,000 per year.

While several formidable legislative hurdles must be leaped before the 1956 Housing Act will be the law of the land, it is obvious that substantial momentum is being built up to enact a much larger housing program than President Eisenhower had originally requested. The Administration request had been for 35,000 public units per year for the next two years. Senator Herbert H. Lehman, who spearheaded the drive for a high rate of public housing construction, attacked the Administration's low figure in Senate debate. "It was clearly shown," he said, "that just three or four of our major cities could alone utilize this amount of public housing in a very short period of time."

Both the Senate and House bills allot substantial proportions of the proposed public housing to elderly persons. The Senate bill establishes a scholarship program to increase the number of students in city planning courses throughout the country.

"Here's why our city installed its sixth BJ Submersible"

Says L. E. Cunningham, Mayor of this progressive midwestern city



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The BJ Submersible operates completely submerged in water at any depth. This sealed, submerged unit needs no pump house and is unaffected by weather extremes, floods or dust. The BJ Submersible requires no field adjustments. Normally gives more than 20 thousand pumping hours before service is required. Silent and vibrationless.

"A dependable, protected water supply system is vital to the future growth of both our residential and industrial areas.

In the past our wells were pumped by surface motor deepwell turbines requiring pump house protection and special maintenance. In 1951 Wayne Richardson, our Waterworks Superintendent, working with R. Anderson, Engineering, replaced an old deepwell turbine with a modern Byron Jackson Submersible.

Our experience with this completely submerged pump was so satisfactory that we converted all our wells to submersible operation, having just completed the installation of the sixth unit. The combined capacity of all these units is now 5 MGD with storage facilities for 1,700,000 gallons.

The people of Belvidere are now assured a pure water supply that is completely safe from flood or other disaster conditions. And our people also benefit as taxpayers since routine maintenance is eliminated and no costly, space-consuming surface structures are necessary. Byron Jackson Submersibles have provided us with the answer to all our pumping problems."

SINCE **BJ** 1872

Byron Jackson

Division of Borg-Warner Corporation

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TENNESSEE CORPORATION

Ferri-Floc

FERRIC SULFATE

The Superior

COAGULANT

With The Plus

FACTORS

Ferri-Floc gives smoother, more efficient and trouble free operation. Whatever your particular water treatment problem may be, you can depend on Ferri-Floc doing a superior job and doing it efficiently and economically—Ferri-Floc is a free flowing granular salt which can be fed with few modifications through any standard dry feed equipment. It is only mildly hygroscopic, thereby permitting easy handling as well as storage in closed hoppers over long periods of time.

Excellent Taste and Odor Control — **Coagulation Over Wide pH Range**

Rapid Floc Formation — **Color Removal** — **Bacteria Removal**

Turbidity Removal — **Manganese and Silica Removal**

Ease of Operation — **Economical** — **Increased Filter Runs**

WATER TREATMENT

Efficient coagulation of surface or well water. Effective in lime soda-ash softening. Adaptable to treatment of all industrial applications.

SEWAGE TREATMENT

Ferri-Floc coagulates wastes over wide pH ranges — It provides efficient operation regardless of rapid variations of raw sewage — Is effective for conditioning sludge prior to vacuum filtration or drying on sand beds.

LIQUID SULFUR DIOXIDE

HIGHEST QUALITY

SO_2

Available in: Cylinders, Ton Drums, Tank Trucks and Tank Cars

LIQUID SULFUR DIOXIDE

As an antichlor SO_2 has proven to be very effective in controlling accurately the amount of residual chlorine in water supplied to the distribution system.

The quantity of SO_2 needed to remove chlorine is in the ratio of 0.905 parts of SO_2 for each part of chlorine to be removed or reduced.

For plants operating under conditions where control is difficult, superchlorination and dechlorination with SO_2 is more practical than the "break-point" treatment.

COPPER SULPHATE

Available in 100 pound bags.

COPPER SULFATE

Long recognized as essential to properly control algae, and other microscopic organisms. Copper Sulfate will control about 90% of the micro-organisms normally encountered in water treatment plants more economically than any other chemical.

TENNESSEE CORPORATION

617-29 Grant Building, Atlanta, Georgia

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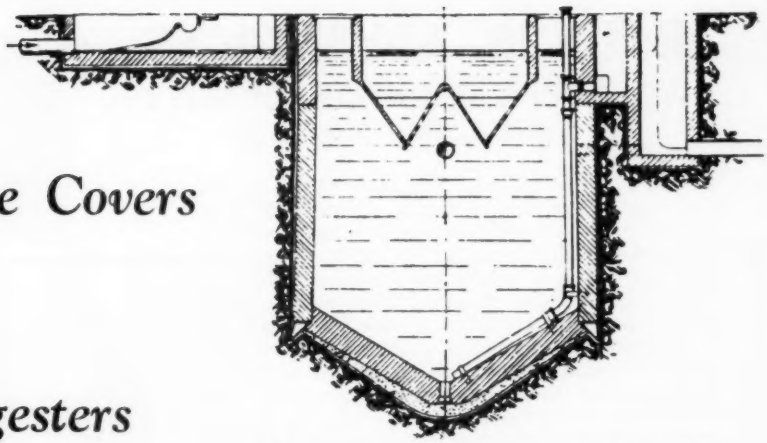
Truncated-Cone Covers for Sewage Digesters



The science of digester design has its origin with this Imhoff tank, often used in revised form today.

SOMETHING better in sludge-digester design was a keynote plea at the New Jersey Sewage Works Association meeting, held recently in Atlantic City. Guenter Spohr, chemist at the Ridgewood, N. J., sewage treatment plant made the plea in a prepared discussion of digester practices during the Operators' Breakfast session.

Mr. Spohr urged consideration of the German digesters with a truncated-cone cover. This, he pointed out, reduces the area for scum formation, and thus minimizes scum problems.

In his discussion, Mr. Spohr traced the development and evolution of digester design, beginning with the "Fosses Mouras" developed in France in 1860, leading to the "septic tank" developed in England, later the Travis tank, and eventually the famous Emscher or Imhoff tank, with its large digestion compartment, generally eight times the size of the sedimentation space.

Current U. S. Practice

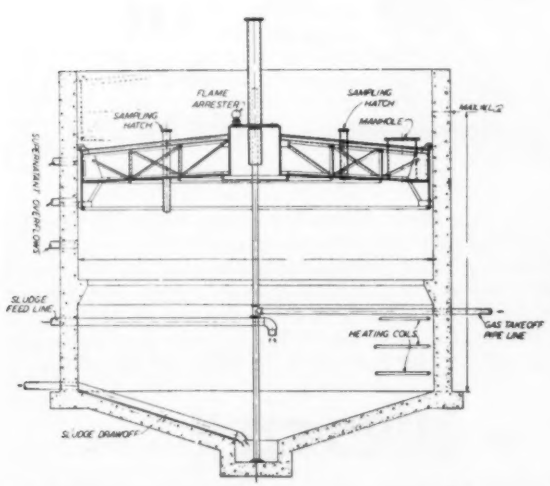
The development of current United States practice, using separate sludge digesters, brought about the use of round or rectangular tanks, generally of reinforced concrete, with either fixed or floating covers. To encourage good anaerobic digestion, these tanks first had some type of submerged hot-water heating coils. However, sludge accumulating on the coils and corrosion or scaling inside the pipes themselves caused their eventual abandonment. Alternate methods of heating the tanks appeared in the form of:

Injection of high-pressure steam in the sludge, and circulation of the sludge by the steam-injection effect.

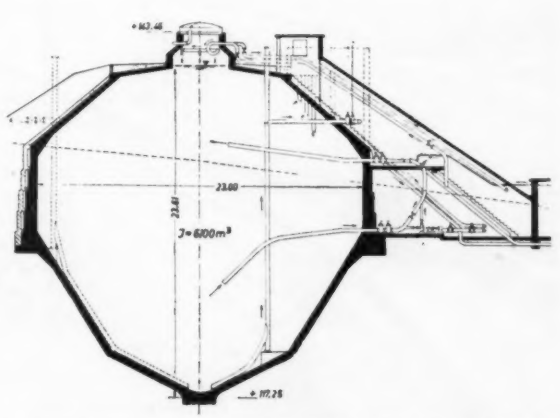
External heating through a heat exchanger outside the digester.

Heating the digester with a cylindrical container situated in the middle of the digester, provided with a double wall. A hot-water boiler supplies the heat for the cylinder.

Still another method is the Passavant feed and circulation system. This is designed to give better control over tank contents by heating the sludge before it enters the tank, thus providing for inspection and



Digesters more frequently follow this general plan. The floating cover gives good flexibility.



Recent German practice has resulted in this type of design that reduces the sludge surface area and consequently minimizes the problems of scum.

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THE **MIRO-FLEX** CO., INC.
1824 EAST SECOND WICHITA, KANSAS

maintenance accessibility. The feed device for the Passavant digestion tanks performs the following functions:

- conveys the heated sludge to the digestion tank;
- distributes it;
- mixes it with the scum.

The tank uses an "s-shaped" distributing pipe provided with fins which destroy the surface scum and gently stir the contents of the tank. The operator can circulate the tank contents in zones to suit requirements if needed. Thus he can circulate raw, seeding, and digested sludge as required. Dr. Rumpf of Passavant-Werke finds a slow mixing more favorable to the bacterial activity.*

These German developments have shown the value of keeping the sludge surface in the tank at a minimum to eliminate surface area for the scum. From this has been developed the design like the frustrum of a cone. Sometimes a cylindrical neck or gas dome is added.

Other methods of eliminating scum include the propeller mixers, useful especially in large digesters; and the introduction of compressed sludge gas at the bottom of the digestion tanks. Both were developed by Dr. Ing. Pruess, and the latter has been adapted to practice in the U. S.

* This particular design is familiar to many in the United States through experimental work done in Baltimore by C. E. Keefer, deputy sewer engineer.

Photocopying Speeds Business in Greece, N. Y.

By GORDON A. HOWE
Supervisor
Town of Greece, N. Y.

COSTS of paper work, mounting due to town growth, have been profitably reduced in Greece, N. Y., by use of a legal size photocopying machine. It eliminates errors in copying, and copies in minutes material that formerly took hours.

Rapid Growth

In the last five years Greece, a suburb of Rochester, N. Y., has seen the building of more than 3,000 new homes. The town has four shopping centers, six industries, six volunteer fire departments, a full-time salaried police force, a modern sewage treatment plant, and new water supply facilities. Town government is centered in a handsome town office building that also serves as a community center.

Such growth had been accompanied by an increasing number of petitions from citizens. In any resulting action attorneys for both sides of any question had to have copies of these petitions with names. Signatures had to be used and Town Clerk N. Raymond Kraft, Deputy Town Clerk Badgerow and I were soon searching for some way of handling the copying. In the first place, much of the clerical time was being consumed in making copies of other forms and materials. All this material was perfectly legible and it became apparent that some type of photographic copying would solve not only the problem of petition copying but many others at the same time.

A number of types of copying equipment were investigated. Some ran into thousands of dollars and required extensive training of the operator. Others were not sufficiently flexible in potential uses. Final choice was a Kodak Verifax Copier which makes up to five or six good positive copies of any document. It is so simple to operate that a stenographer can master it in a few minutes. There is no waiting for copies since it takes less than a minute to turn out a usable copy. It requires no darkroom and occupies the space of a typewriter. It also reproduces copies of zoning notices, complicated surveyor's reports, petitions, and advance copies of business to be discussed at town administration meetings.

Supervisor Gordon A. Howe and Town Clerk N. Raymond Kraft initiated the survey of all copying by the town's stenographic staff, and then purchased this photocopier.

Death certificates, formerly copied by typists, are now Verifaxed, so that both the state and the town copies are identical and legally admissible.

The water commissioner finds the equipment invaluable for supplying complete day-by-day reports of changes in water pressures. Every 24 hours department members gather the charts showing hourly water consumption and pressures in various areas. These are the conventional circular charts on which the daily history of the water system is recorded automatically in a fine red line on the circular graph paper. This information has to be sent a group of engineers for study and analysis.

$50,000 for Uniforms

KNOXVILLE, TENN. city council has approved $50,000 for uniforms for police and firemen.

Mayor John W. Surgent is talking from a new American LaFrance pumping engine car-to-car with every piece of Clifton, N. J., fire apparatus.

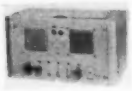
All Clifton Fire Trucks Now on Fire Radio

1948

1955

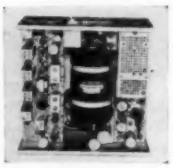
The transmitter-receiver base station above is 60 watts against 250 watts for the old one at the left, due to more sensitive modern receivers.

1948



1955
remote control units

1948



1955
mobile units

Clifton's police department has had 2-way radio since 1946. Equipment progress in 8 years brought about a modern base station unit of 60 watts in a smaller cabinet and weighing 100 pounds less with new receivers that blanket the City of Clifton, N. J. The 1955 remote control unit (See pair at upper right) incorporates all the features of the one above it. New mobile unit fits receiver and power supply into one cabinet of flat design enabling various modes of installation.

DEDICATING its new fire department mobile radio communications system marked Clifton, N. J., as the first municipality in Passaic County to have separate fire and police radio frequencies.

Prior to the installation of this equipment, four vehicles of the fire department had been equipped to tie-in with the police radio, but now 14 vehicles representing all fire units in the city are on their own frequency. Included in this group are the four CD vehicles which, like those of the fire department, can now be instantaneously dispatched to any fire or disaster in the city.

The radio equipment was purchased by the city for the fire department and CD units with the aid of the Federal Civil Defense Administration Matching Funds Program. Fire Chief John Zanet and William Holster, city engineer and director for civil defense, were the leaders in the movement to obtain this equipment.

The base station is fire headquarters, with the main dispatching unit located at the signal alarm headquarters. A secondary dispatching unit is located at the base station at fire headquarters. The full installation completely equips all vehicles of the fire department with a complete three-way communications system—base-to-car, car-to-base, and car-to-car.

The radio operator at signal-alarm headquarters will have fingertip control of every piece of apparatus in the city; and through the three-way communications system all units are alerted as to the seriousness of any situation.

The photograph (right) shows the officials of the city in attendance. Representing Federal Telephone and Radio Company was Harold White, Mobile Radio Communications Department, Clifton, N. J.

Mobile Communications Sales Manager Harold White of Federal Telephone and Radio Corporation is demonstrating base-to-car at signal headquarters. Left to right are: Fireman Peter Dodorovitch, City Manager J. Fitzgerald, Councilman Emil Gacy, City Engineer William Holster, Mayor John W. Surgent, Councilmen Stanley Zwier, William Brogan, and Ira Schoen, and Fire Chief John Zanet.

New NETCO Catch Basin Cleaners are Working Throughout the Land in These Cities

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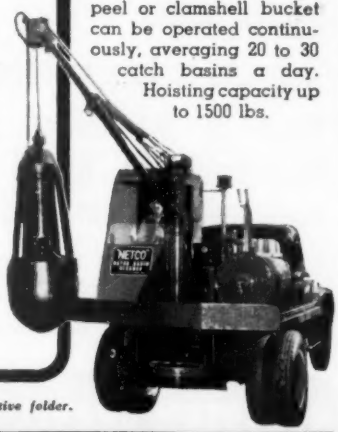
Lowell, Mass.
Grand Rapids, Mich.
Trenton, N. J.
Westfield, N. J.
Binghamton, N. Y.
City of N. Y., N. Y.
Utica, N. Y.
Parma, Ohio
Philadelphia, Pa.
Pa. Turnpike Comm.
Hamilton, Toronto Canada

Easily mounted on any short wheel base truck with 8 ft. in back of the cab, the NETCO with orange peel or clamshell bucket can be operated continuously, averaging 20 to 30 catch basins a day. Hoisting capacity up to 1500 lbs.



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CLARK-WILCOX COMPANY
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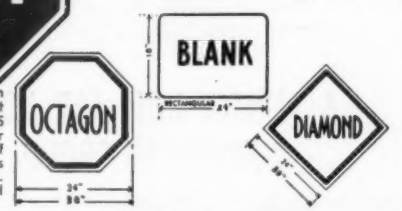
'EZ-ON' Faces slip on right over your present signs—in less than 5 minutes — hence your signs are never out of service. Used by cities and Highway Dept's. all over the United States.



1. Slip 'EZ-ON' Face over old sign. Note wide flanges.
2. Then bend flanges backward holding 'EZ-ON' Face in place.
3. Use Crimping Tool to clamp flange and secure Sign Face.

GRACE 'EZ-ON' Sign Faces are reflectorized and meet all specifications for brilliance and reflective qualities. INVESTIGATE . . . and save. Their cost is HALF that of ordinary signs! SEND FOR SAMPLE SIGN.

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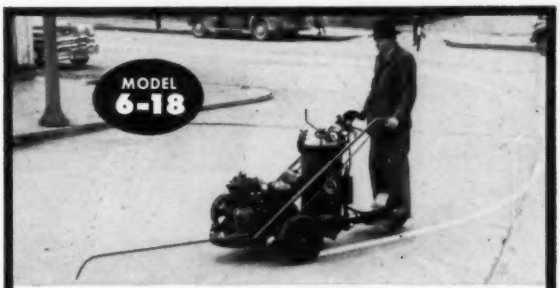

LOW COST, COMPACT MODEL 6-18. Built for the county with limited marking requirements — an easily handled, 18 gallon capacity machine with features usually found only in higher priced markers. The Model 6-18 marks curved lines as easily as straight — solid or intermittent with regular or reflective paint. Heavy duty paint guns have jet spray tubes laying sharp lines 3" to 6" in width. Travels 3 to 5 miles per hour; built-in riding trailer provided.

With all these big-unit features, the M-B Model 6-18 is easily the most handy marker on the market today.

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All M-B Line Markers feature the largest strainers available — up to 180 sq. inches; standard make guns; positive paint agitation with paddle-type agitators; and largest standard tank capacities — from 11.2 gallons to 1,000 gallons.

SEE THE COMPLETE LINE of big production M-B Markers and special "made to order" truck-mounted models — they meet every highway department requirement! Send for free catalog today. **Write M-B Corp., 1612 Wisconsin Ave., New Holstein, Wisc.**

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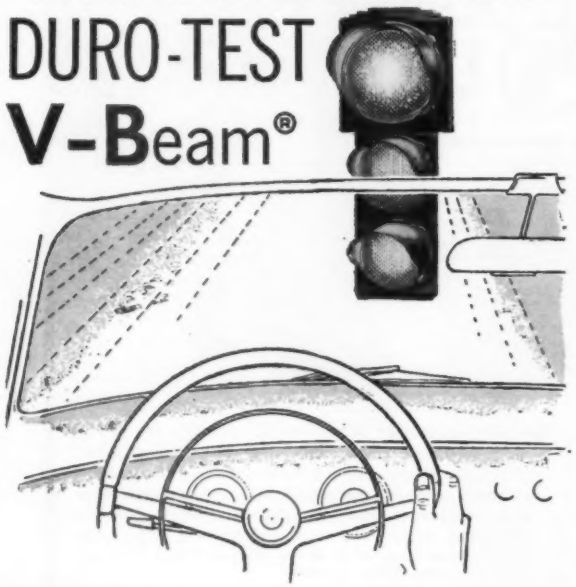

NEW 150w. lamp fits 8″ and 12″ signals

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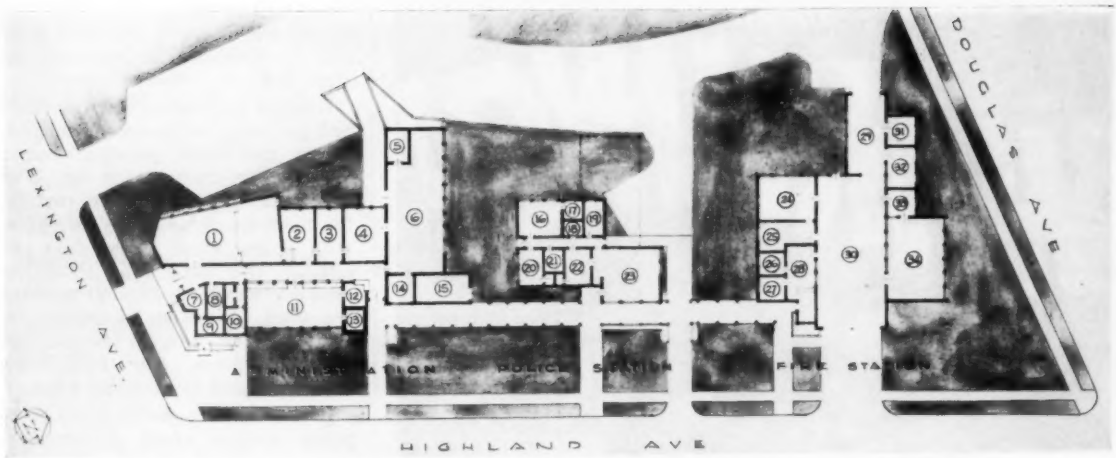


1. Council Chamber
2. Mayor & Council
3. Secretary
4. Manager
5. Vault
6. Public Works
7. Rest Room
8. Kitchen
9. Women
10. Men
11. Finance Clerk
12. Information
13. Vault
14. Engineer
15. Air Conditioning
16. Squad Room
17. Rest Room
18. Arsenal
19. Storage
20. Police Chief
21. Interrogation
22. Identification
23. Business Office
24. Dormitory
25. Locker Room
26. Map Room
27. Fire Chief
28. Control Room
29. Repair
30. Engine Room
31. Storage
32. Tool Room
33. Kitchen
34. Classroom

Civic Center Planned for Zooming Growth

LIKE any growing municipality that plans ahead, El Cajon, Calif., builds ahead. Thus its new civic center has been designed to cope with the city's phenomenal growth.

Erected two years ago, the low-cost municipal building is a long, modern one-story structure containing 14,478 square feet of floor area developed at a cost of $163,154. It houses the city hall, fire and police headquarters, and is so planned that there is enough ground space for expected future expansions. Both City Manager B. J. Noden and architect George C. Hatch of San Diego, who worked closely together in drawing up the plans, expect the city will eventually quadruple its size.

In 1950, El Cajon, a suburban city adjoining San Diego, covered 1.6 square miles and had a population of 5,608. Today, the city comprises 7½ square miles and has a population of 21,276.

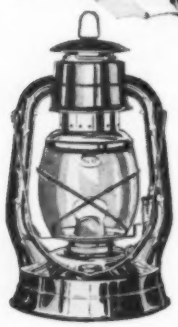
Built along modern functional lines with brick, wood, and glass surfaces, the civic center incorporates some of El Cajon's older architectural features. For example, a covered passage, reminiscent of Spanish Colonial arcades, runs the entire length of the center. It saves interior corridor space.

Administrative departments like the mayor's office, the city manager's office, the city clerk's office, council

Old-fashioned fire house lamp in front of fire station gives nostalgic touch to El Cajon's fire headquarters in the new civic center.

The Council Chamber at the El Cajon civic center. Irregular back brick wall is designed for sound control.

Because of extensive use of glass the desk sergeant in the police headquarters building sees a wide area of downtown El Cajon.



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LOOK TO DIETZ FOR *Safety* LIGHTING

chamber, etc., are located in the left end of the building. The center area houses the police department while the fire department occupies the right end.

Glass is used extensively for walls and partitions to assure working efficiency and better personnel supervision. For example, the clerk's office, which utilizes a long corridor for its working area, has a counter with sliding glass panels, thus permitting the tax-paying public to transact business without entering the office. Likewise, in the fire department the walls separating the apparatus room, operations office, classroom, and kitchen are glass.

El Cajon takes special pride in its police station which it considers unique: a large glass wall facing onto the street opens the entire operations room and the desk sergeant to public view. Other rooms like the council chamber, make use of exposed brick walls for attractiveness and acoustical purposes.

Thus by planning its civic center with care and forethought, El Cajon has been able to solve the immediate problem of housing its growing number of municipal employees while at the same time making provisions for future additions to the administrative and police sections.

Central Garages

IF A CITY has a central garage that handles all of its rolling stock, the odds are 7 out of 10 that the department of streets, engineering, or public works has charge of it. Only 7% place the garage in the finance or purchasing department; only 18% have a separate department for motor vehicle equipment. The remaining assign the garage function to various other departments. This is the result of a study made by the International City Managers' Association from information received from 305 cities. The survey was limited to cities operating some type of central garage or similar service agency for all city departments, usually excluding fire and utilities.

The great majority, over 70%, reported that the garage kept records showing the cost of gas, oil, supplies, parts, maintenance, and repair for each piece of equipment. Very few included overhead and depreciation. In most cases each operating agency requests funds in its annual budget for new equipment. Centralized supervision of the use of motor equipment is the exception.

Long-Range Planning Isn't Enough

Cities need day-to-day planning to supplement long-range plans says the mayor of the world's largest city

By Hon. ROBERT F. WAGNER
Mayor, The City of New York

IN my work as mayor of the largest city in the world, I have come to the conclusion that city planning is as much every day planning — as much every generation planning—as it is planning for the generations yet unborn. This does not mean that I believe that we city officials should discard the vision that the Almighty has seen fit to give us. On the contrary, we must use it to the best of our abilities. But we must never think that today we have reached the ultimate and that tomorrow can bring no new problems with which city planners will have to cope.

As we look at our cities today, and realize that they are ever changing, do we dare stratify our thinking and say, presumptuously perhaps, for our grandchildren's ears, this is the city in which you will live? This becomes a particularly challenging question when we look back at the city in which our grandfathers lived, and wonder whether they could have foreseen every demand, every change, dictated by our ever-changing civilization. Let me give you some examples of these points.

I recall the story, never contradicted, to my knowledge, of how 150 years ago New York's officials laid out the Manhattan street system with more east-west cross streets than north-south avenues in order to give maximum access to the Hudson and East Rivers that bordered the island. This was done because at that time New York City's economy was based entirely on its harbor and the goods that flowed between the river docks and the consumers on Manhattan Island. It was also done because the only rapid north-south transportation was by sail boat on those rivers.

If the streets of Manhattan were to be planned today, however, we would devise an entirely different system. Instead of having block sizes that provide more lateral than north-south streets, we would probably plan 400 foot squares with alleys in between the streets to permit off-street truck loading and refuse removal. Such a system could go a long way toward alleviating our present traffic problem — a problem that didn't exist and couldn't be envisaged at the time the street pattern had been laid out in the early 19th Century because the railroad hadn't been invented nor had the trolley car, the truck, omnibus, or automobile.

Planning for the Constant

And yet much of the planning of the past was not mistaken planning. It was no mistake to lay out Central Park. Had it not been planned, more than a century ago, we would not have it today. So, it seems to me, that when we plan for the future, we must plan at long-range for the things that we can envisage as constant things. Let us take the need for recreational facilities and plan for a hundred years to come in terms of such facilities as parks, playgrounds, and beaches. But let us be a bit wary about planning beyond the foreseeable future for the things that can and will change.

Let me explain this a little further: It seemed perfectly evident just a few years back that the new airplanes would require longer runways at our airports than those we had in existence. It would have been possible to extend that thinking, and build runways twice as long as the newer planes required, on the theory that still newer and larger ones would require still longer runways. Today, as we approach the days of vertical take-offs, and the helicopter as an already developed means of transportation, our long-range thinking might be different. Do we know today whether vertical take-offs for rocket-propelled planes is the transportation of the future, and if so, how far off in the future?

Some of our greatest frustrations come in the field of planning our schools. We can project our possible school needs 10 or even 20 years ahead. We can foresee, we think, that a school will be needed here more than there a few years hence. But we cannot neglect the children of today, we cannot tell them that they should stay on part-time, so that the next generation will be better off. So we compromise, and we build where the schools are needed today, and when later they turn out to be out-dated, we sell them. The work in New York City of the Committee on School Utilization, which plans the closing of schools in neighborhoods from which the children have gone, is a good example of necessary — although short term—planning in a most vital field of city government. This brings me to the topic of short term planning.

Too often there is a tendency to think of planning *only* in terms of the long-range goal. The long-range goal is important and must never be forgotten, but neither must it be regarded as the sum total of city planning. There is important short-term planning, which involves prudent administration and handling of current problems.

For example, we would be roundly criticized as municipal officials if we paved a street one month, and ripped it up for a sewer the next. Yet it takes planning to avoid exactly that sort of thing, especially in a city as big as New York. In this regard I am proud that during my time as Borough President of Manhattan, my office set a pattern of coordination to avoid just that kind of waste of public funds.

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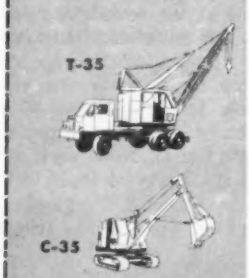

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mediate planning, and I'll give you an example of that. All of you know Park Avenue in New York as one of our great city thoroughfares—a symbol all over the world of the urban living that is New York. Yet north of 96th Street in New York where the railroad tracks leading into Grand Central Station run above ground, there are slums and decay bordering Park Avenue. So there are in existence for carrying out some time in the future, plans for widening Park Avenue north of 96th Street and for eliminating the overhead railroad. But in the intermediate period, as housing projects bordering on upper Park Avenue are being built, they are being set back from the present street lines to permit that long-range development of Park Avenue when it occurs.

In conclusion, let me say to you that our responsibility as city officials is to use the best talents of our generation to meet the problems at hand and the problems that we can foresee. We can peer into the future, we can influence the future, but we cannot dictate the future. What we must do, therefore, is to dedicate ourselves, each and every one of us, to making the city we live in (and, for myself, the city I was born in) a better place for ourselves and our children within the limits of the foresight given to man.

EDITOR'S NOTE: The above article by Mayor Wagner is based on a speech delivered by the Mayor at the annual luncheon of the Citizen's Housing and Planning Council of New York on May 25, 1956.

Pennsylvania Towns Get Federal Planning Aids

THIRTY small municipalities in Pennsylvania have joined the federal Urban Planning Assistance Program and will receive $125,203 in federal money for the development of local master plans and urban studies.

The grant was awarded to the Pennsylvania Department of Commerce, which will supplement the federal money with $128,900 from its own budget to extend planning assistance to the communities.

The program is implemented under provisions of the Housing Act of 1954, which provides federal grants to official state planning agencies to help them give planning aid to communities of less than 25,000 people.

Besides comprehensive master plans, the over-all work calls for capital improvement programs, studies of community services, and economic and population surveys.

Galvanic Corrosion in Water Meters——

Culprit of the Water Department

Careful selection of metals and quality control minimizes corrosive action of water

By HERBERT F. BARRETT
Sales Manager
Buffalo Meter Co., Buffalo, N. Y.

FOR years, various meter manufacturers have sought to build water meters with materials that would minimize the corrosive effect of water. Although much has been accomplished, little public discussion has been given the matter. Lack of publicity does not mean the subject is unimportant, for over the years, galvanic corrosion of water meters has cost the water works of this country millions of dollars.

We have been able to gather certain scientific data that permit drawing certain helpful conclusions. Some come from our own tests and experiences; others from studies conducted by the Engineering Research Institute of the University of Michigan, made for the Buffalo Meter Co.

Complex Chemistry

The chemistry of water is extremely complex, for the mineral content of water and its corrosive effect not only varies with the different sources, but also changes according to season. To further complicate matters, the treatment and storage of water also changes its effect upon metals. Additional difficulties enter into the process of water sampling. Chemical properties of the sample change during shipment to the laboratory. Then too, such tests lack the effect of flowing water. Other factors also enter the picture, but those already mentioned signify that tests of the corrosiveness of water made in the laboratory from samples are of very little value, for the sample is no longer fully representative of the water in the main. This does not refer to tests made in laboratories for health purposes.

The corrosion of metals exposed to water is also affected by the velocity of flow. It is a well-known fact that increased velocity increases any corrosive tendency by bringing more fresh water in contact with the metal and by washing away the by-products of corrosion. This poses the question of using larger meters to reduce the velocity-corrosion effect. Although some cities having unusual water now use a ¾-inch meter instead of the ⅝-inch size to obtain better meter performance, it is questionable whether the longer life of the larger meter is attributable to less mechanical wear or a result of less velocity-induced corrosion. Additional studies might be made along these lines.

Galvanic Corrosion Defined

Before discussing various galvanic couples, the term galvanic corrosion should be defined. The International Nickel Company defines it as "an accelerated electrochemical corrosion, produced when one metal is in electrical contact with a different metal, both being in the same corroding medium or electrolyte. Corrosion of this type results usually in a higher rate of solution of the less noble metal, and protection of the more noble metal. During the corrosion process, an electric current is generated by the two metals in contact, the magnitude of this current being equivalent to the acceleration of the corrosion of the more vulnerable metal beyond its normal extent."

The International Nickel Company also sets up a table of "Galvanic Series of Metals and Alloys" that differs from the usual "Electromotive Series." Starting from the most noble end of the series we have passive stainless steel, monel, copper-nickel alloys, bronzes, brasses, tin, active stainless steel, cast iron, and zinc. A metal near the head of this list is protected by the sacrifice of the corroded, or less noble, metal further down in the series.

Effect of Metal Combinations

The basic metal used to build meters that will resist water corrosion is usually a bronze of about 85% copper, 5% tin, and 5% lead. This alloy has good corrosion resistance but in practice, an all-bronze meter cannot be achieved. Certain small parts must be made from rods and sheets which are not identical with the chemical and physical properties of the cast parts; but by using grade A phosphor bronze, 5% tin, containing the properties are so close to those of the casting that galvanic action is minimized. Experience based on meters so constructed and placed in service shows that under average water conditions, the use of metals much alike as possible minimizes galvanic reaction, although in corrosive water, it may be necessary deliberately to sacrifice one part to protect another of greater importance in the performance of the meter.

This conclusion is further borne out by checking meters having bronze works and casings made all or partly of cast-iron bottoms. This combination can be found on frost-bottom meters, large-size meters, and in some wartime meters. The couple of bronze and cast iron produces the greatest voltage potential and current flow of any couple that may be found in meters. The more noble bronze is protected at the expense of the iron.

The galvanic couple between the iron frost bottom and the bronze chamber can be minimized by using a plastic liner, brass liner, or by galvanizing or enameling the frost bottom. However, there is a separate action between the brass liner and the bronze chamber, and once holes appear in the liner, the galvanic couple is then between the bronze and the iron bottom. Under these conditions, a limited conclusion is that in corrosive water, use some protection for iron bottoms other than brass liners.

Another couple that bears consideration is that of the bronze casing and nickel-bronze chamber. Although the potential difference is small, the nickel-bronze chamber would tend to be protected at the expense of the casing. The nickel-bronze chamber must be combined with nickel alloy small parts to prevent their rapid corrosion. This combination is not a cure-all for corrosive conditions, but is probably best in acid water or in water containing chlorides, such as is found in some sea coast regions. Again, a limited conclusion,

(Continued on page 211)

WHITE'S CITY DEPENDS ON . . REDA FOR VITAL WATER SUPPLY!

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WHITE'S CITY, NEW MEXICO . . . GATEWAY TO FAMOUS CARLSBAD CAVERNS, uses two, 30 H.P. REDA *Submergible Electrical* PUMPS. These pumps provide water for up to 900 overnight visitors and employees, countless casual visitors, for restaurants, filling stations, adequate fire protection and even a large swimming pool.

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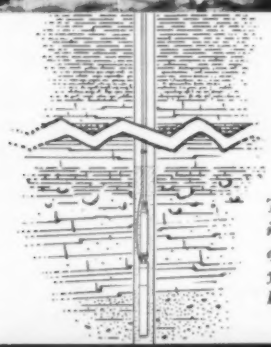
Today, from this source, two REDA equipped wells have a capacity of 250,000 gallons per day!



Here's Why Municipalities Like WHITE'S CITY Choose REDA Submergible Electrical PUMPS For Vital Water Supply:

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Zoning and Planning Notes

Edited by NORMAN WILLIAMS, Jr.

Depth of Commercial Zoning

OHIO. *Shick* v. *Ghent Road Inn*, 132 North Eastern (2d) 479 (Court of Appeals, June 13, 1951).

In this case, the area zoned for business near the intersection of two main highways near Akron extended back 200 feet from one of the highways. A restaurant sought permission to build 15 motel units in the area zoned for residence in the rear, and argued that the residential zoning restriction was unconstitutional and was based on purely aesthetic factors. Other businesses in the vicinity extended back more than 200 feet, and so were nonconforming uses.

The Court held that the wisdom of the 200-foot regulation was purely a legislative question:

> "To question the wisdom or policy of fixing 200 feet as the permissible depth for such commercial enterprises is not the province of the court."

Restaurant Includes Diner

NEW YORK. *Application of Dengeles*, 148 New York Supplement (2d) 92 (Supreme (lower) Court, November 21, 1955).

In this case, the Hempstead business district regulations permitted a restaurant as of right, and other uses of the same general character by a special permit. The Court held that a diner was a restaurant and therefore permitted as of right. It was also noted that the municipality had permitted some previous diners without requiring a special permit, and that, if diners operating on a 24-hour basis created increased traffic and disturbance, the Town Board might take appropriate action to control them.

Storage of Municipal Trucks In Residence District

NEW YORK. *Nehrbas* v. *Incorporated Village of Lloyd Harbor*, 147 New York Supplement (2d) 738 (Supreme (lower) Court, November 7, 1955).

The Lloyd Harbor zoning ordinance restricted the entire Village to 1-family residences on plots of 2 acres or more. The Village acquired a lot with a barn and proposed to use the plot for Village offices, a meeting room, a court room, and the storage of vehicles and heavy equipment which were owned by the Village and used for highway repairs, snow removal, and garbage collection.

The Court held, first, that the Village could restrict its territory entirely to single-family houses. The Court recognized that, in the exercise of its governmental functions, a Village was exempt from its own zoning regulations; but it was held that such zoning regulations applied to the Village when it was acting in its proprietary capacity, and that the purposes for which the trucks were stored fell within that category.

Standards in Delegation of Power—Preamble

WISCONSIN. *Smith* v. *City of Brookfield*, 74 North Western (2d) 770 (Supreme Court, February 7, 1956).

In this case, the agricultural district regulations provided that for certain listed uses, including sand and gravel pits, a permit could be issued by the Board of Appeals after recommendation by the Planning Commission. A sand and gravel pit was established without obtaining a permit, and the operators argued that the foregoing provision was unconstitutional because it lacked definite standards to regulate the grant of such special permits. By a 4 to 3 vote, the Wisconsin Court held that the goals of zoning set forth in the preamble could serve as standards for this purpose.

> "It must be kept in mind what the words 'location and plan of operation' imply in this ordinance. In determining whether or not the effect of a particular gravel pit operation on the taxable values of property in the city and upon the health, safety, comfort and welfare of the public will be detrimental, it is necessary for the board to know, for instance, the distance of the pit site from the roads and the surrounding residential property, ingress and egress locations, necessary equipment for removal of the gravel, the proposed depth of the pit and whether it will be leveled when operations cease, the hours of the day it is intended to be operated, the number of laborers and trucks to be employed, the routes the trucks will take, whether blasting will be done, and the like. These and similar facts will be detailed in the 'location and plan of operation' submitted to the board. The phrase itself is very broad, and necessarily so, since the facts in one application may vary greatly from the facts in another, and obviously it would be impossible for the framers of the ordinance to anticipate all the possible details which might be involved in the different uses enumerated therein. In exercising its discretion under this ordinance, the Board is obliged to take into consideration every factor in the plan of operation which would have any bearing on the purposes for which the ordinance was enacted. In order to approve an application, the board must determine that the particular proposed plan will not conflict with those purposes."

The Court also noted that, in the recent aesthetic zoning case*, the Court upheld a broad provision without strict standards—which was true enough.

In dissenting, three judges argued that the preamble could be used to help interpret an ordinance whose meaning was doubtful, but could not be used to fill a major gap in the provisions of an ordinance.

* *State* ex rel. *Saveland Park Corporation* v. *Wieland*, 269 Wisconsin 262.

Variances from Coverage Restrictions

NEW YORK. *Ryback* v. *Murdock*, 148 New York (2d) 322 (Appellate Division, January 31, 1956).

The "area districts" of the New York zoning law impose restrictions on lot coverage for most types of buildings in most districts. This case involved an apartment building with stores on the ground floor. The Board of Standards and Appeals granted an area variance to permit about 90% coverage for the ground floor only, instead of about 70%. In applying for the variance, the developer argued that "practical difficulty and unnecessary hardship" was involved because a store with considerable depth was necessary in order to find a "choice tenant."

In reversing the grant of a variance, the Court held that the strict tests set forth in New York law on the grant of variances* are primarily concerned with use variances, and are not applicable in their entirety to area variances. However, the Court held that there was nothing in this record which would uphold the grant of a variance.

* *Otto* v. *Steinhilber*, 282 N. Y. 71.

Non-Conforming Use—Trespassers

OHIO. *State of Ohio* v. *Pierce*, 132 North Eastern (2d) 102 (Supreme Court, February 1, 1956).

In this case, premises had long been used by members of the general public (including the zoning inspector) for hunting and fishing, and such use was held to be a valid nonconforming use. An argument made by the State that the hunters and fishermen were trespassers, and that their activities could therefore not establish a valid nonconforming use, was rejected on the ground that they were licensees.

Covenants—No Implied Restriction Against Public Road within Development

NEW YORK. *Baxendale* v. *Property Owners Association of North Shore Acres*, 140 New York Supplement (2d) 176 (Appellate Division, May 2, 1955), affirmed, 309 New York 871, 131 North Eastern (2d) 287 (Court of Appeals, November 23, 1955).

In this case, restrictive covenants in an expensive single-family residential area on Long Island explicitly limited development to single-family dwellings with a 30-foot front yard, and prohibited nuisances. When it was proposed to create a public road in the development, an objection was raised that this would violate at least the spirit and intent of the covenants. By a vote of 3 to 2, the Appellate Division held that it would not, and the Court of Appeals affirmed.

Zoning Briefs

Contributed by WILLIAM JABINE, Attorney

California

NONCONFORMING USE NEED NOT BE IDENTICAL. Owner of buildings rented to two corporations which used them for light industry and storage sought injunction to prevent city authorities from arresting him for violation of zoning ordinance. Buildings had been operated as nonconforming use with various changes of occupants. Court held that nonconforming use need not be identical with original use, and relying largely on fact that trial court judge had visited property and observed conditions, held that changes in area were tending toward increased industrial use. Endara v. City of Culver City, 294 P.2d 1003. (Court of Appeal, 2d Dist. Div. 1, Mar. 20, 1956).

Connecticut

CONVERSION OF UNSALABLE RESIDENCE PERMITTED. Variance granted for construction of multiple-family dwellings in zone restricted to single-family residences in New Haven. Court upheld granting of variance, pointing out extent to which neighborhood had changed, that although old residence had been on market several years no offer to buy for use as residence had been received and that conversion of structure would definitely improve its appearance. Culinary Institute of America v. Board of Zoning Appeals, 121 A.2d 637. (Supreme Court of Errors and Appeals, Mar. 13, 1956).

CHURCH BARRED FROM RESIDENTIAL ZONE. Action of local authorities in barring construction of church in residential zone upheld. Court pointed out that if church were built neighborhood would lose its peace and quiet, that property values would fall, that increased traffic would bring noise and increased danger, and that the proposed church parking lot would extend to the boundaries of neighboring properties, thus invading privacy of the owners thereof. West Hartford Methodist Church v. Board of Zoning Appeals, 121 A.2d 640. (Supreme Court of Errors and Appeals, Mar. 13, 1956).

Florida

CITY OFFICIALS BEST JUDGE OF ZONING REQUIREMENTS. As result of previous proceedings, Miami Beach zoning authorities had been directed to rezone area including plaintiff's three lots which had been zoned as residential. Lots were bounded on South by business zone, on West by hotel and apartment zone and on North and East by single-family residence zones. City rezoned area for hotels and apartments and plaintiff went to court to compel rezoning to business zone. Lower court directed rezoning to business zone, but Supreme Court reversed decision and upheld city's action in rezoning for hotels and apartments. City of Miami Beach v. Wiesen, 86 So.2d 442. (Supreme Court, Mar. 14, 1956. Rehearing Denied April 20, 1956).

Georgia

CITY PROCEEDS WITH REZONING DESPITE SUIT. Owner of land in business zone attempted to enjoin city officials from rezoning to two-family only residential use. Appeal from decision refusing injunction dismissed as moot, because in meantime city officials had acted and made valid change. Parker & Co. v. Village of North Atlanta, 91 S.E.2d 355. (Supreme Court, Feb. 13, 1956).

Illinois

SHOPPING CENTER HELD BENEFIT TO NEIGHBORHOOD. Local authorities barred development of vacant land as shopping center as area was in residential zone. Gas station already on property. Testimony to effect that property would be worth from $95,000 to $107,000 for business use and from $25,000 to $30,000 if restricted to residences. Court held that shopping center would benefit neighborhood, would enhance value of surrounding property and that barring business use was unreasonable and approached point of confiscation of owners' interest in land. Krom v. City of Elmhurst, 133 N.E.2d 1. (Supreme Court, Mar. 22, 1956).

PROTESTING TAXPAYERS LIVE TOO FAR AWAY. Amendment to zoning ordinance which would permit construction of factory units was opposed by residents of city who brought taxpayers' suit. Testimony revealed that nearest protesting taxpayer lived 1½ miles from site of proposed factory units and others even further away. Court held that they lived too far away to be damaged, that there was no injury or threatened injury to their property, no increase in their taxes, and that they had no authority to represent the people of the city. Garner v. County of Du Page, 133 N.E.2d 303. (Supreme Court, Mar. 22, 1956).

Indiana

REZONING PUTS END TO COURT ACTION. Variance permitting drive-in restaurant in area zoned for single and two-family residences granted by local authorities. Protesting neighbors carried matter to court where decision granting variance was affirmed. After court's decision was made, area was rezoned for business. Appellate Court ruled that rezoning made question moot and so dismissed appeal. Schacht v. Board of Zoning Appeals, 132 N.E.2d 924. (Appellate Court, Mar. 23, 1956).

Maryland

REPEAL OF ORDINANCE CONFIRMS CONTESTED CHANGE. While appeal from decision affirming change from residential to commercial was pending, local authorities repealed ordinance and zoned area as commercial. Court held that this action extinguished no general interest and made case on appeal moot. Lake Falls Association v. Board of Zoning Appeals, 121 A.2d 809. (Court of Appeals, April 10, 1956).

INADEQUATE INFORMATION MAKES NEW PROCEEDINGS NECESSARY. Lack of information in record on appeal from refusal to issue writ of mandamus to compel tentative approval for a 48-acre subdivision plan caused Court to send back matter, for further proceedings. Board of County Commissioners v. Oxford Development Co. 121 A.2d 239 (Court of Appeals, Mar. 15, 1956).

Massachusetts

RACING DOGS BANNED IN RESIDENTIAL ZONE. Action to compel issuance of license under statute providing for operation of dog kennels. Owner desired to keep racing greyhounds. License refused on ground that site was in residential zone. Apparent conflict between licensing and zoning ordinances taken to court. Supreme Judicial Court held that zoning ordinance prevailed. Meadows v. Town Clerk of Saugus, 133 N.E.2d 498. (Supreme Judicial Court, Mar. 28, 1956).

Michigan

CHANGE UPGRADING SMALL AREA HELD SPOT ZONING. Rezoning of three blocks from multiple dwelling use to one- or two-family use held invalid as spot zoning. Area was practically surrounded by other areas zoned for multiple dwellings. Trenton Development Company v. Village of Trenton, 75 N.W.2d 814. (Supreme Court, April 2, 1956).

HEAVY TRAFFIC MAKES LOTS UNSUITABLE FOR HOMES. Lots on main route between Detroit and Pontiac in single-family residential zone. Court held ordinance invalid because unreasonable, and reviewed evidence that only one single-family residence had been built in area since 1917, that traffic count showed that 1,818 vehicles passed within 30 minutes, and that resulting noise made lots unsuitable for residences. Change to commercial status permitted. Bassey v. City of Huntington Woods, 74 N.W. 897 (Supreme Court, Mar. 1, 1956).

Nebraska

ADMINISTRATIVE ACTION DOES NOT REQUIRE REFERENDUM. City ordinance changing zoning classification of particular property held not subject to referendum. One block rezoned for business to permit construction of supermarket. Court held that rezoning was administrative act carrying out provisions of original ordinance and although original ordinance had required referendum as a legislative act, the administration of its provisions did not. Kelley v. John, 75 N.W.2d 713. (Supreme Court, Mar. 24, 1956).

New Hampshire

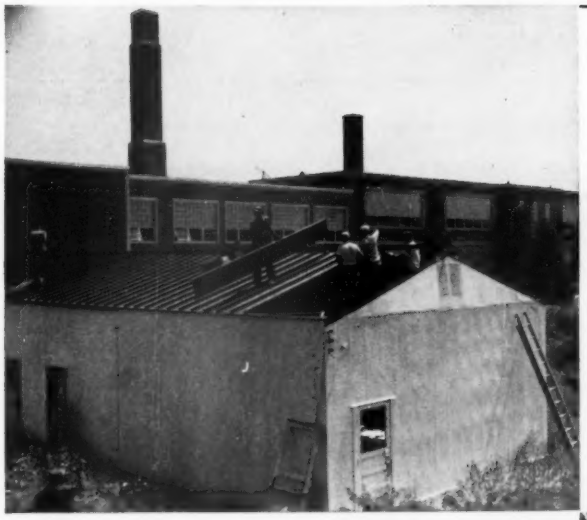
SERVICE STATION PERMITTED TO REPLACE GARAGE. Permission granted to demolish garage and build gas station on site occupied by garage since 1927. Owner of residence on adjoining lot, built in 1954, objected on ground that noise would annoy his sick mother. Court held that plaintiff failed to present sufficient proof of possible damage and dismissed case. Jadda v. Manchester, 121 A.2d 803. (Supreme Court, Mar. 29, 1956).

Ohio

BACK OF RESTAURANT PROPERTY IN RESIDENTIAL ZONE: MOTEL BARRED. Operator of restaurant applied for permit to build three, five-room motel units on rear of his land, despite zoning ordinance restricting land more than 200 feet from highway to residential use. Court upheld ordinance because site of proposed motel units was more than 200 feet from highway. Schick v. Ghent Road Inn, 132 N.E. 479 (Court of Appeals, Summit County, June 13, 1951).

Virginia

CLUB FOR RECREATION PERMITTED: PROFIT-MAKING NOT VALID OBJECTION. Owner of 97-acre wooded tract containing 17-acre lake desired to erect two bath houses and recreation hall as part of plan to use property as club with swimming, boating, and sports facilities. Local authorities denied permission although zoning ordinance permitted "public and private parks, recreational areas and resorts, including golf courses, swimming pools, and boat facilities with structures accessory thereto." Court held that although plan set up a quasi-commercial enterprise, that was not sufficient to bar granting of permit. Mooreland v. Young, 91 SE 2d 438 (Supreme Court of Appeals, March 5, 1956).



SCHOOL TO GARAGE. In process of dismantling, this Armco Building had been used 7 years as a school. No longer needed, it was moved and re-erected to serve as a garage for school buses.

STORAGE TO ??????. At present this Armco Building is used as storage for park equipment. But within a few days, it could become a pumping station, repair shop, office or garage at another site.

Armco Steel Buildings Let You Keep Pace with Changes

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To illustrate, an Ohio city had need for a 4-room addition to a school in 1948. So they erected an Armco Building consisting of two units 24 feet wide by 96 feet long. Last year they no longer required the building as a school. So the Armco structure was dismantled, altered and re-erected at another site as a bus garage.

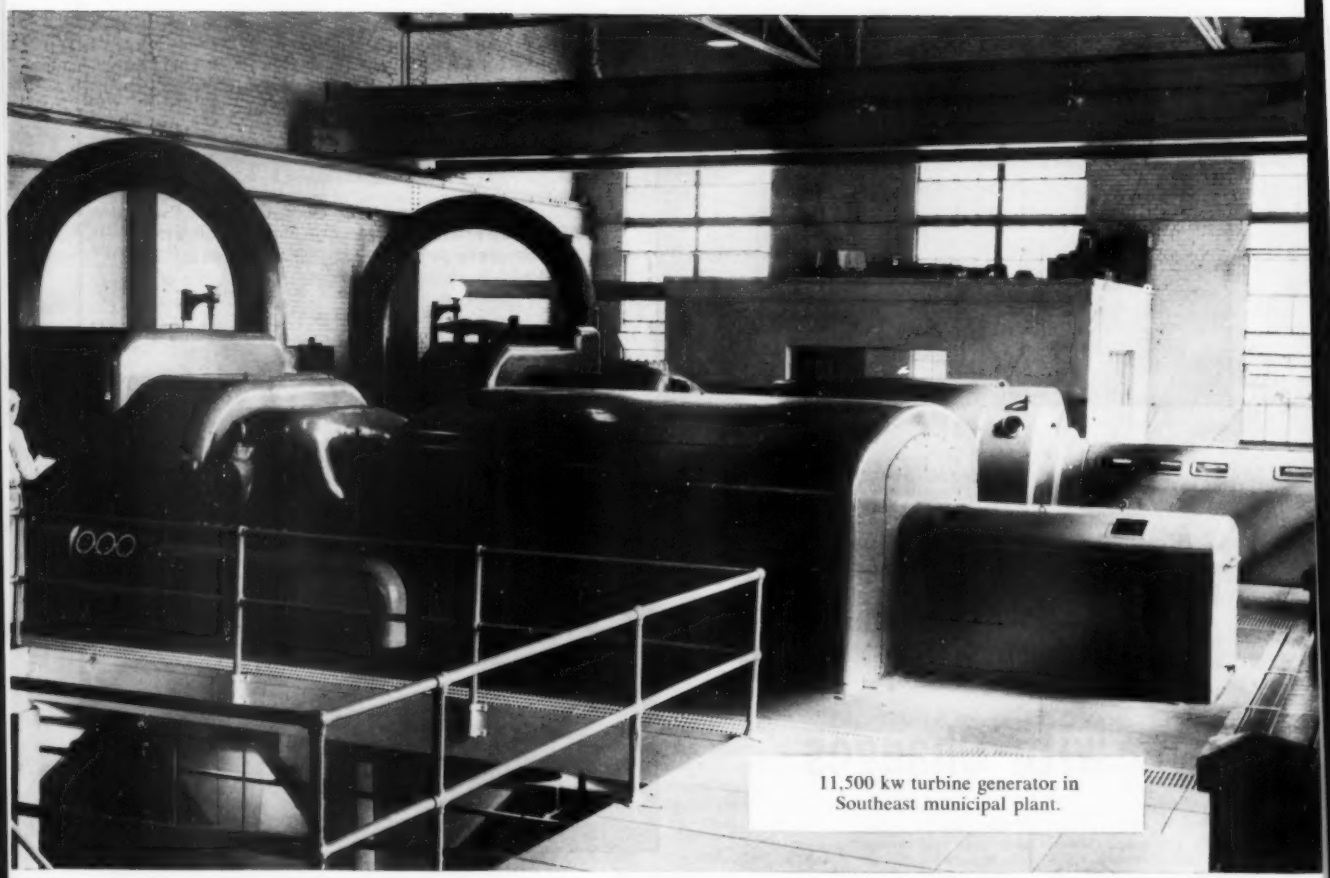
Permanent Structures with Portability Advantages

Armco Steel Buildings are designed as permanent structures—sturdy and rigid, wind- and weather-tight, fire- and lightning-resistant. The Armco STEELOX method of fitting prefabricated steel panels together makes for ease of erection and also simplifies dismantling without damage.

Armco Buildings satisfy building needs quickly and economically. They are available in a wide size range, go up fast, and need little maintenance. Write us for data. Armco Drainage & Metal Products, Inc., 5256 Curtis Street, Middletown, Ohio. Subsidiary of the Armco Steel Corporation. Export: The Armco International Corporation.

ARMCO STEEL BUILDINGS

ARMCO®



11,500 kw turbine generator in Southeast municipal plant.

Specializing in turbine generators up to 15,000 kw gives better quality control and product service

Take priority, for example. Because Worthington is not involved with building the huge central station turbine generators, they give A-1 priority to the design and manufacture of industrial and municipal units.

Every Worthington turbine generator receives the personal attention of top engineering and manufacturing personnel. Skilled craftsmen, with years of experience in the manufacture of turbine generators, take pride in their job of building reliability into every part. They take the time and trouble to take care of the little things that mean so much to dependable operation. Their attention to detail is reflected in such things as the dials which are recessed and mounted at an angle for easy reading. And before it is allowed to leave the factory, every unit is completely assembled and meticulously tested.

When considering a turbine generator installation up to 15,000 kw, call on the *specialists* in the field. Get in touch with your nearest Worthington District Office or write for Bulletin 1960C. Address Section T63, Worthington Corporation, Harrison, N. J.

T.6.3

WORTHINGTON

Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

Airport—Sale for Manufacturing Site Valid

Where city first sold an airport to manufacturer for use of site for plant and plant was never established on property and city later wished to rescind sale, held, sale price of $64,000 was not so inadequate as to constitute donation of public funds to private corporation, and deed was not invalid. *City of Cuero* v. *Tupper-Texas Inc.*, 226 F.2d 121 (C.A.5th Cir., Sept. 16, 1955).

Airports—City Title by Condemnation

In suit to try title to land, city was held to have acquired (through proper condemnation proceedings) a fee simple title for the purpose of maintaining and operating an airport. *Jackson* v. *City of Abilene*, 281 S.W.2d 767 (Tex.Civ.App., June 3, 1955).

Annexation—Statute Requiring Declaratory Judgment Invalid

Statute that would delay submission of question of annexation to electors for more than constitutional period by requiring that cities bring suit for declaratory judgment as part of the annexation proceedings, is invalid. *McConnell* v. *City of Kansas City*, 282 S.W.2d 518 (Mo., Sept. 12, 1955).

City Building—Fall on Stairs—City Not Liable

In suit against city for injuries allegedly sustained when plaintiff fell on stairs leading to offices of a city department, held, maintenance of Police Department offices and recreational room for department employees by city on second floor of building owned by the Water Works and Gas Board was a governmental function, and city was not liable for defect in steps. *City of Minette* v. *Quinley*, 82 S.2d 192, Ala., Aug. 18, 1955).

Condemnation for National Guard Armory Valid

City had right under statute and city charter to condemn land for use as site of National Guard Armory, and an attempt at showing city might use land for training of federal reserve units in future could not defeat such condemnation. *Kansas City* v. *Aronson*, 282 S.W.2d 464 (Mo., Sept. 12, 1955).

Condemnation—Personal Service of Notice Not Necessary

Condemnation statute in the Nassau County Administrative Code is not unconstitutional for failure to provide for personal service of notice to condemn on property owner. *Matteis* v. *Town of Hempstead*, 145 N.Y.S.2d 256 (Sup.Ct.App. Div. 2nd Dept., Oct. 7, 1955).

Electrical Power—Incorporation of Town Did Not Render Prior Use of Facilities Illegal

Where cooperative electrical company had right to furnish electricity to all of county, including complaining town, which at time of granting such right was unincorporated, held, incorporation of town did not render cooperative's prior use of electrical facilities in public places illegal. *Town of Gans* v. *Gookson Hills Electrical Cooperative, Inc.*, 288 P.2d 707 (Okla., Oct. 11, 1955).

Garbage Collection Contract Specification Can Require Certain Number of Trucks at Time of Bidding

A municipality can require that a certain number of trucks be had by bidders on municipal garbage collection contract at the time of bid, and the ability to procure this number by date of performance was not compliance with this specification. *William A. Carey & Co.* v. *Borough of Fair Lawn*, 117 A.2d 141 (N.J.Super.App. Div., Sept. 29, 1955).

Hedges—Nuisance, City Destruction Upheld

City could properly cut down a private hedge which had become a public nuisance by preventing traffic through an alley. *Updegraff* v. *City of Norman*, 287 P.2d 909 (Okla., June 28, 1955).

Natural Gas—Distributors Entitled to Cost of Distributing Refund

Gas distributors who were given certain refund when rate increase was disallowed, were required to distribute the refund among their customers, but they were entitled to compensation for expense of making this distribution. *Northern Natural Gas Company* v. *Federal Power Commission*, 225 F.2d 886 (8th Cir., Sept. 16, 1955).

Noise—Prohibiting Ordnance Applies to Railroad

Language of Borough of Dumont ordinance proscribing "loud and unnecessary noise which disturbs the public peace . . . between the hours of eleven o'clock p.m. and seven o'clock a.m." was sufficient to fairly apprise the defendant railroad company of which it proscribed. *State* v. *New York Central R.R. Co.*, 116 A.2d 800 (N.J.App.Div., Sept. 21, 1955).

Off-Street Parking—Proper "Public Use" for Condemnation

Off-street parking facilities constitute a "public use" for which power of eminent domain might be exercised, even though there might be a resulting special benefit to private individuals. *Ermels* v. *City of Webster City*, 71 N.W.2d 911 (Iowa, Sept. 20, 1955).

Parks—With Garage Below, Not Violation of Purpose

In action to restrain defendants from building and maintaining an automobile parking garage under a park and to secure fee simple title to park property in the plaintiffs, held, even if evidence did support plaintiffs' theory of an implied oral dedication by plaintiffs' predecessors, city's maintenance of garage under park would not entitle dedicator's heirs to recover property. *Green* v. *City of San Antonio*, 282 S.W.2d 769 (Tex.Civ.App., Sept. 14, 1955).

Patrolman's Discharge for Permitting Prisoner to Escape Valid

Evidence warranted the discharge of patrolman on the ground that he permitted prisoner to escape. *Watkins* v. *Civil Service Commission of City of Chicago*, 128 N.E.2d 254 (Ill.App., Sept. 20, 1955).

Public Utilities—County Cannot Represent Taxpayers

The County of Wayne is not authorized to represent ratepayers of the county in utility matters brought before the Michigan Public Service Commission. *County of Wayne* v. *Michigan Public Service Commission*, 72 N.W.2d 109 (Mich., Oct. 3, 1955).

Soil Removal Prohibition—Grading for Residence Exempt

Plaintiff's efforts to prepare land for residential purposes did not violate an ordinance regulating and requiring a license or permit for soil removal. *Buckley* v. *City of Bloomfield Hills*, 72 N.E.2d 210 (Mich., Oct. 3, 1955).

Solicitors—Prohibition to Visit Residence Without Invitation Valid, As to Other Property Invalid

"Green River" type ordinance of City of Gulfport prohibiting solicitors from going on private residences and property and buildings other than residences without first being requested or invited was valid for private residences but invalid as to property and buildings other than residences. *Day v. Klein*, 82 So.2d 831, (Miss., Oct. 24, 1955).

Solicitors—Regulation Valid But License Fee Invalid As Tax

City's license fee for canvassers and solicitors held not reasonably related to the cost of regulation and therefore an invalid tax, but regulatory measures of ordinance were severable from fee requirements and violation conviction sustained. *Bozeman* v. *City of Brooksville*, 82 So.2d 729 (Fla., Oct. 31, 1955).

Taxation—Delivery of Automobiles Is Doing Business Within City

Business of regularly, systematically, and continuously delivering in New York City automobiles that were hauled to city from points outside city was a business which was carried on "within" the city for purposes of statute imposing motor use tax on commercial vehicles. *Metropolitan Convey Corporation* v. *City of New York*, 144 N.Y.S.2d 622 (Sup.Ct.Sp.term, N.Y.Cty., Sept. 3, 1955).

Taxation—Surgeon Not Required to Pay Professional License Tax

Surgeon's application for correction of assessment of professional license taxes was granted as the ordinance did not show a plain intent to include the particular license within its terms and its provisions could not be extended by implication beyond the clear import of the language used. *City of Richmond* v. *Bosher*, 89 S.E. 36 (Va., Sept. 14, 1955).

Taxation—Correspondence School, Gross Receipts of Intrastate Activity

Where the city imposed a license tax based upon the annual gross receipts of a trade school conducting correspondence courses, such tax applies only to intrastate activities of the school. *National Schools* v. *City of Los Angeles*, 287 P.2d 151 (Cal.App., Sept. 6, 1955, Cert. denied, U. S. Supreme Ct., Feb. 27, 1956).

Planning better roads

by **INTERNATIONAL SALT COMPANY, INC.**—America's largest producer of salt

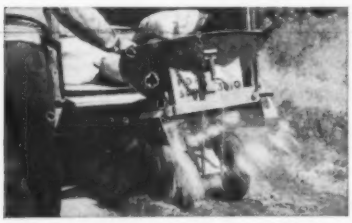
Stabilizing Shoulders with Rock Salt Costs Less . . . Gives Added Safety

Highway officials in many states have found that stabilizing road shoulders with rock salt is economical for two reasons. First, rock salt is relatively low in cost—and even with lower-grade materials, it helps provide better-wearing shoulders. Secondly, shoulders made with rock salt provide substantial savings in road maintenance. These shoulders have high density, so the aggregate is not readily blown or eroded away. And they actually protect the roadway itself by preventing water from seeping under the pavement edge.

From the safety standpoint, rock-salt-stabilized shoulders have the necessary load-bearing hardness to support emergency traffic in all weather. Soft-shoulder accidents are eliminated—and blinding dust is no longer a hazard. These modern shoulders also provide excellent drainage, so that water, snow and ice will not collect on the road surface.

To show how simple—and economical—it is to stabilize shoulders with rock salt, here is an actual step-by-step story of how this method was used on a U. S. Highway with a high traffic count. For safe, efficient stabilization of the shoulders, Sterling Rock Salt, produced by International Salt Company, was chosen.

1. The first step was to scarify and mechanically mix the shoulders to a depth of 4″. Bank-run dirt with good clay content was added, as well as ¾″ No. 2 stone, until proper mixture was attained.



2. Then, 6 lbs. of Sterling Rock Salt per square yard was spread on the shoulders. Application of this rock salt was by rotary spreader. After this process, materials were again dry-mixed.

3. Next, the shoulder was thoroughly wetted down. After wetting, soil was again mixed mechanically. Additional wettings were needed throughout this procedure, so that soil had optimum moisture content.

4. After mixing and wetting, all the materials were then bladed to a proper level for rolling. To provide for adequate drainage of water, a slope of at least one-half inch per foot was maintained on the shoulders.

5. Final step was rolling with rubber tires. Because rock-salt-stabilized materials compact more than unstabilized materials, the 6″ depth of loose material was compacted to about 4″ by rolling.

This stabilization procedure varies with particular soil and road conditions. For expert advice on how stabilization can work in *your* area, contact International.

FREE TECHNICAL ASSISTANCE ON ROAD STABILIZATION

International Salt Company will be glad to help you work out an effective, economical rock-salt road-stabilization program for your system. There's no cost or obligation. Just contact your nearest International sales office.

For further technical information on rock-salt stabilization, write for International's free series of booklets, "Better Highways." Address: International Salt Co., Inc., Scranton 2, Pa.

Sales offices: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, O.; Cleveland, O.; Philadelphia, Pa.; Pittsburgh, Pa.; and Richmond, Va.

FOR ROADS, INDUSTRY, FARM, AND HOME—

STERLING SALT

PRODUCT OF INTERNATIONAL SALT CO., INC.

Recent City Manager Appointments

The following portraits are of city managers whose appointments have been announced in preceding issues of *The American City*

Gale Wilson
Fairfield, Calif.

Doyle Miller
Fontana, Calif.

E. Earl Udall
Provo, Utah

Thomas A. Banfield
Elmira, N. Y.

S. Douglas Smith
Hayward, Calif.

PHILIP W. ANCELL, formerly city manager of South Norfolk, Va., was appointed city manager of Bedford, Va., succeeding Robert W. Martin.

Hereford, Texas, has appointed DUDLEY BAYNE, the city secretary of Canyon, Texas, to succeed Cecil E. Massey as city manager.

IRVING H. BECK, former manager of Norwich, Conn., was appointed city manager of Newport, R. I., succeeding William A. Gildea.

The superintendent of utilities at Howard Lake, Minn., VERNON BOXELL, was appointed city manager of Mound, Minn., succeeding Carsten D. Leikvold.

Milton-Freewater, Ore., has appointed J. R. CASTNER, manager of Carey, Ohio, to succeed Robert L. Brunton as city manager.

RONALD W. CLIFFORD, city manager of Lincoln, Maine, was appointed city manager of Mexico, Maine, succeeding Leo J. Morency.

PAUL A. FLYNN, manager of Norway, Mich., has been appointed first manager of Lower Southampton Township, Feasterville, Pa., not of South Southampton, as reported in the June issue.

The city manager of Needles, Calif., W. A. GILCHRIST, was appointed city manager of Glendale, Ariz., succeeding Walter C. Brown.

The first manager of Red Bank-White Oak, Tenn., is CLIFF GREENWOOD.

Lake Mills, Wis., appointed its superintendent of light and water, WILLIAM HANSEN, to succeed James R. Schubert as city manager.

ROBERT H. HAYES, JR., city manager of Mt. Pleasant, Texas, was appointed city manager of Terrell, Texas, succeeding E. E. Boyd.

Martinsville, Va., has appointed JULIAN F. HIRST, manager of Pulaski, Va., to succeed Kent Mathewson as city manager.

O. G. HOLWAY left the managership at Hazel Park, Mich., to succeed Norman R. Barnard as city manager of Troy, Mich.

J. L. HORNER, city manager of Carthage, Texas, was appointed city manager of Andrews, Texas, succeeding L. B. Parrish.

The first manager of Montpelier, Vt., is RALPH IRVING, manager of Ellsworth, Maine.

Deland, Fla., has appointed H. W. JOHNSON, city manager, succeeding William D. LeVeille.

Dewey, Okla., has appointed HUEY LONG, city manager of Atoka, Okla., as its first city manager.

WALTER E. LOONEY, city manager of Caspian, Mich., was appointed city manager of Gaylord, Mich., succeeding C. R. Miles.

Three Rivers, Mich., has appointed the city manager of Gaylord, Mich., CLIFFORD R. MILES, to succeed John Z. Smid as city manager.

The first city manager of Concord, Mass., is THEODORE M. NELSON, city manager of Northfield, Vt.

L. E. LINUS O'ROURKE, an employee of the State of Rhode Island, was appointed city manager of Hartland, Vt., succeeding William Blaisdell.

DAVID D. ROWLANDS, city manager of Eau Claire, Wis., was appointed city manager of Tacoma, Wash., succeeding Frank H. Backstrom.

The first city manager of Upper Arlington, Ohio, is the safety-service director, C. C. RYAN.

Santa Barbara, Calif., appointed its finance director, PERRY W. SCOTT, to succeed Robert H. Shelton as city manager.

JAMES R. SCHUBERT, city manager of Lake Mills, Wis., was appointed city manager of Otsego, Mich., succeeding James R. Stelt.

The manager of Santa Barbara, Calif., ROBERT H. SHELTON, was appointed city manager of Newport Beach, Calif., succeeding John J. Sailors.

Auburn, N. Y., has appointed GEORGE F. TRAIN, former manager of Auburn, to succeed Alfred Turner as city manager.

Ross F. WALKER, city manager of Norton, Va., was appointed city manager of Alcoa, Tenn., succeeding A. B. Smith, (retired).

Succeeding William T. McIlwain as city manager of Coral Gables, Fla., is IRA F. WILLARD, city manager of Alexandria, Va.

Arvada, Colo., has appointed KARL G. WILLIAMS, city manager of Madison, S. D., to succeed Vernon Barnett as city manager.

ORIN F. NOLTING, *Executive Director, International City Managers' Association*

REPRESENTATIVE MUNICIPAL BOND ISSUES

May 31 to June 12, 1956

Date of Issue			*Purpose*	*Average Maturity (Years)*	*Net Interest Cost Per Cent*
5/31/56	Columbus, Ohio	$1,500,000	Water Works Enlargement	18	2.60105
5/31/56	Hennepin Co. Minn. Ind. School District	300,000	Athletic Field and School Building	12	3.732
5/31/56	York County, S. C.	600,000	Roads	11	2.7446
6/ 4/56	Okemos, Mich., School Dist.	30,000	Tax Anticipation	10½ mos.	2.826
6/ 4/56	Menomonie, Wis.	138,000	School	5½	2.438
6/ 4/56	Midland, Mich.	351,000	Street Improvement (Special Assessment)	3	2.436
6/ 7/56	Nicolet, Wis., High School District	1,750,000	School	10	2.6872
6/12/56	Muncie, Ind., School City	500,000	School Improvement	7	2.18
6/12/56	Cerritos Junior College Dist. (Los Angeles Co., Calif.)	2,000,000	School Building	10½	3.1011

Compiled from *The Bond Buyer*

Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

July 22-28—Vienna, Austria
INTERNATIONAL FEDERATION FOR HOUSING AND TOWN PLANNING. Annual Convention. For information address Charles Ascher, 838 West End Ave., New York 25, N. Y.

Aug. 17-23—Panama City, Panama
AMERICAN COMMITTEE FOR INTERNATIONAL MUNICIPAL COOPERATION. Sixth Inter-American Congress of Municipalities. For further information address the ACIMC, 1313 East 60th St., Chicago 37, Ill.

Aug. 19-23—Hamilton, Ontario
CANADIAN FEDERATION OF MAYORS AND MUNICIPALITIES. Annual Convention (Royal Connaught Hotel). Exec. Dir., George S. Mooney, Office M-33, Mount Royal Hotel, Montreal, Quebec, Canada.

Aug. 20-24—Toronto, Canada
NATIONAL SHADE TREE CONFERENCE. Annual Convention (Royal York Hotel). Sec.-Treas., L. C. Chadwick, Dept. of Horticulture, The Ohio State University, Columbus, Ohio.

Aug. 29-31—State College, Pa.
PENNSYLVANIA SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Convention (Pennsylvania State University). Exec. Sec., J. R. Harvey, 916 Diamond, Meadville, Pa.

Sept. 6-7—Kenosha, Wis.
WISCONSIN CHIEFS OF POLICE ASSOCIATION. Annual Convention (Hotel Dayton). Sec., R. J. Exner, Chief of Police, Wisconsin Rapids, Wis.

Sept. 6-8—New York, N. Y.
NEW YORK STATE CONFERENCE OF MAYORS. Annual Convention (Hotel Waldorf-Astoria). Exec. Sec., Morgan Strong, 6 Elk St., Albany, N. Y.

Sept. 6-8—Grand Rapids, Mich.
MICHIGAN MUNICIPAL LEAGUE. Annual Convention (Pantlind Hotel). Dir., John H. Huss, 205 S. State St., Ann Arbor, Mich.

Sept. 7-11—Grd. Teton Natl. Pk., Wyo.
NATIONAL CONFERENCE OF STATE PARKS. Annual Meeting (Jackson Lake Lodge). Exec. Sec., Harlean James, 901 Union Trust Bldg., Washington 5, D. C.

Sept. 9-13—Chicago, Ill.
INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE. Annual Conference (Conrad Hilton Hotel). Exec. Sec., Leroy E. Wike, Mills Bldg., Pennsylvania Ave. at 17th St. NW., Washington 6, D. C.

Sept. 9-14—Seattle, Wash.
AMERICAN INSTITUTE OF PARK EXECUTIVES. Annual Convention (Olympic Hotel). Exec. Sec., Alfred B. LaGasse, 143 S. Lincoln Ave., Aurora, Ill.

Sept. 10-12—Kansas City, Mo.
MISSOURI MUNICIPAL LEAGUE. Annual Convention (Hotel Muehlebach). Exec. Dir., Bruce J. Carl, 212-214 Guitar Bldg., Columbia, Mo.

***Sept. 12-14—Bolton Landing, N. Y.**
AMERICAN WATER WORKS ASSOCIATION—New York Section. Annual Meeting (Sagamore Inn). Sec., Kimball Blanchard, Rensselaer Valve Co., c/o Ludlow Valve Co., 11 W. 42nd St., New York 17, N. Y.

Sept. 12-14—Kalamazoo, Mich.
AMERICAN WATER WORKS ASSOCIATION—Michigan Section. Annual Meeting (Hotel Burdick). Exec. Sec., T. L. Vander Velde, Chief, Section of Water Supply, Michigan Dept. of Health, Lansing 4, Mich.

Sept. 12-14—St. Paul, Minn.
AMERICAN WATER WORKS ASSOCIATION—North Central Section. Annual Meeting (Hotel Lowry). Sec.-Treas., Leonard N. Thompson, Room 216, Court House, St. Paul 2, Minn.

Sept. 16-20—Banff, Alberta, Canada
INTERNATIONAL CITY MANAGERS' ASSOCIATION. Annual Convention (Banff Springs Hotel). Exec. Dir., Orin Nolting, 1313 E. 60th St., Chicago 37, Ill.

Sept. 16-20—Bretton Woods, N. H.
NEW ENGLAND WATER WORKS ASSOCIATION. Annual Meeting (Mt. Washington Hotel). Sec., Joseph C. Knox, 73 Tremont St., Boston, Mass.

Sept. 17-18—Topeka, Kans.
LEAGUE OF KANSAS MUNICIPALITIES. Annual Convention. Exec. Dir., Allen E. Pritchard, 512 Capitol Federal Bldg., Topeka, Kans.

***Sept. 17-19—Chattanooga, Tenn.**
AMERICAN WATER WORKS ASSOCIATION—Kentucky-Tennessee Section. Annual Meeting (Hotel Patten). Sec., J. W. Finney, Jr., 553 S. Limestone St., Lexington, Ky.

Sept. 17-20—Denver, Colo.
INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual Convention (Cosmopolitan Hotel). Sec., Irvin Shulsinger, 130 W. 42nd St., New York 36, N. Y.

Sept. 17-20—St. Louis, Mo.
AMERICAN TRANSIT ASSOCIATION. Annual Convention (Sheraton-Jefferson). Exec. Vice-Pres., G. W. Anderson, 292 Madison Ave., New York 17, N. Y.

Sept. 17-21—Boston, Mass.
ILLUMINATING ENGINEERING SOCIETY. National Technical Conference (Hotel Statler). Exec. Sec., A. D. Hinckley, 1860 Broadway, New York 23, N. Y.

Sept. 19-21—Columbus, Ohio
OHIO MUNICIPAL LEAGUE. Annual Convention (Neil House). Acting Dir., J. E. Gotherman, 85 S. Grant Ave., Columbus, Ohio.

Sept. 19-21—Atlanta, Ga.
GEORGIA WATER AND SEWAGE ASSOCIATION. Annual Meeting (Georgia Institute of Technology). Sec.-Treas., A. T. Storey, 1210 Hemphill Ave., N. W., Atlanta, Ga.

Sept. 19-21—Aberdeen, S. D.
SOUTH DAKOTA WATER AND SEWAGE WORKS CONFERENCE. Annual Meeting (Hotel Sherman). Exec. Sec., Charles E. Carl, Director, Division of Sanitary Engineering, State Health Department, Pierre, S. D.

Sept. 20-22—Grand Forks, N. D.
LEAGUE OF NORTH DAKOTA MUNICIPALITIES. Annual Convention (Hotel Dacotah). Exec. Sec., Mrs. Roberta B. McCreery, 408½ Main Ave., Bismarck, N. D.

Sept. 23-25—Roanoke, Va.
LEAGUE OF VIRGINIA MUNICIPALITIES. Annual Convention (Hotel Roanoke). Exec. Sec., Harold I. Baumes, 905 Travelers Bldg., Richmond 19, Va.

Sept. 23-26—Bedford, Pa.
PENNSYLVANIA MUNICIPAL AUTHORITIES ASSOCIATION. Annual Convention (Bedford Springs Hotel). Sec.-Treas., Claude C. Fogelman, 1717 Main St., Northampton, Pa.

Sept. 23-26—Fort Worth, Texas
AMERICAN PUBLIC WORKS ASSOCIATION. Public Works Congress and Equipment Show (Will Rogers Memorial Auditorium and Coliseum and Exhibit Bldg.). Exec. Sec., D. F. Herrick, 1313 E. 60th St., Chicago 37, Ill.

Sept. 24-28—San Francisco, Calif.
INSTITUTE OF TRAFFIC ENGINEERS. Annual Convention (Mark Hopkins Hotel). Exec. Sec., David M. Baldwin, 211 Strathcona Hall, New Haven 11, Conn.

Sept. 25-27—Louisville, Ky.
KENTUCKY MUNICIPAL LEAGUE. Annual Convention (Hotel Brown). Exec. Sec., Carl B. Wachs, Room 64, McVey Hall, University of Kentucky, Lexington, Ky.

Sept. 26-28—LaCrosse, Wis.
AMERICAN WATER WORKS ASSOCIATION—Wisconsin Section. Annual Meeting (Hotel Stoddard). Exec. Sec., Superintendent of Waterworks, City Hall, Madison 3, Wis.

Sept. 30-Oct. 2—Jefferson City, Mo.
AMERICAN WATER WORKS ASSOCIATION—Missouri Section jointly with Missouri Water and Sewage Conference. Annual Meeting (Hotel Governor). Exec. Sec., W. A. Kramer, State Office Bldg., Jefferson City, Mo.

Oct. 1-5—Philadelphia, Pa.
NATIONAL RECREATION ASSOCIATION OF THE UNITED STATES. International Recreation Congress (Bellevue-Stratford Hotel). For further information address Robert R. Gamble, Asst. Secretary General, IRC, United Nations Plaza and 46th St., New York 17, N. Y.

Oct. 4-5—Des Moines, Iowa
LEAGUE OF IOWA MUNICIPALITIES. Annual Convention (Hotel Fort Des Moines). Exec. Sec., Max A. Conrad, 409 Tama Bldg., Burlington, Iowa.

Oct. 7-11—Washington, D. C.
ASSOCIATION OF SCHOOL BUSINESS OFFICIALS OF THE UNITED STATES AND CANADA. Annual Convention (Sheraton-Park Hotel). Exec. Sec., Dr. Charles W. Foster, Business Officials of the U. S. and Canada, 1010 Church St., Evanston, Ill.

***Oct. 8-10—Omaha, Nebr.**
NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS. Annual Meeting (Fontennelle Hotel). Gen. Consul, Charles S. Rhyne, 726 Jackson Pl. NW., Washington 6, D. C.

Oct. 8-11—Los Angeles, Calif.
FEDERATION OF SEWAGE AND INDUSTRIAL WASTES ASSOCIATIONS. Annual Convention (Hotel Statler). Exec. Sec.—Editor, Ralph E. Fuhrman, 4435 Wisconsin Ave. NW., Washington, D. C.

Oct. 9-12—Atlanta, Ga.
UNITED STATES CIVIL DEFENSE COUNCIL. Annual Conference (Biltmore Hotel). Sec.—Exhibit Mgr., George F. Arnold, 181 S. Washington Blvd., Columbus, Ohio.

Oct. 9-12—Atlantic City, N. J.
PENNSYLVANIA WATER WORKS ASSOCIATION. Annual Meeting (Hotel Roosevelt). Exec. Vice-Pres., C. McKim Norton, Regional Plan Association, 205 E. 42nd St., New York 17, N. Y.

Oct. 10—New York, N. Y.
REGIONAL PLAN ASSOCIATION. Annual Meeting (Hotel Roosevelt). Exec. Vice-Pres., C. McKim Norton, Regional Plan Association, 205 E. 42nd St., New York 17, N. Y.

Oct. 14-17—Chicago, Ill.
NATIONAL INSTITUTE OF GOVERNMENTAL PURCHASING. Annual Conference and Products Exhibit (Hotel Conrad Hilton). Exec. Vice-Pres., Albert H. Hall, 1001 Connecticut Ave., Washington 6, D. C.

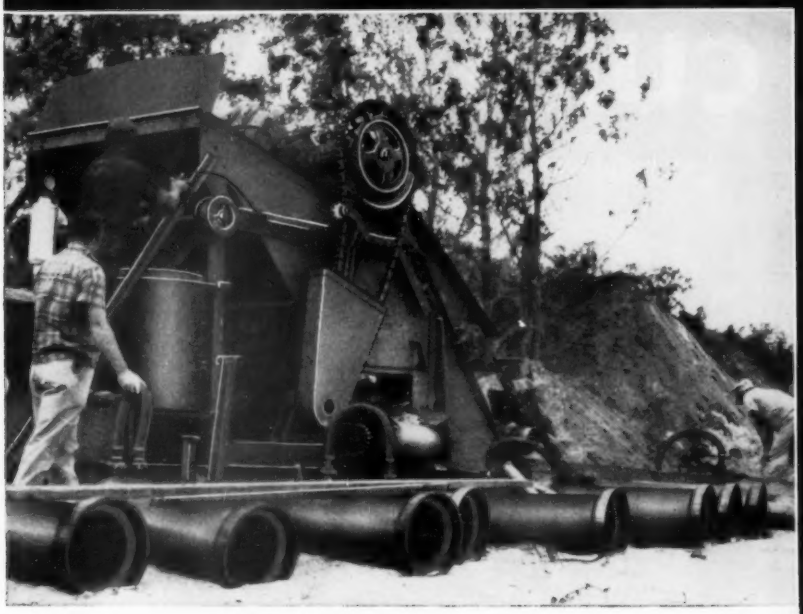
Oct. 14-17—Little Rock, Ark.
AMERICAN WATER WORKS ASSOCIATION—Southwest Section. Annual Meeting (Marion Hotel). Sec., Leslie A. Jackson, Robinson Memorial Auditorium, Little Rock, Ark.

Oct. 15-16—St. John, New Brunswick
AMERICAN WATER WORKS ASSOCIATION—Canadian Section, Maritime Branch. Annual Meeting (Admiral Beatty Hotel). Sec., J. D. Kline, c/o Public Service Commission of Halifax, P. O. Box 608, Halifax, Nova Scotia.

Oct. 15-17—Rye, N. Y.
GOVERNMENTAL RESEARCH ASSOCIATION. Annual Conference (Westchester Country Club). Sec., Elsie V. Haas, 684 Park Ave., New York 21, N. Y.

(Continued on page 210)

When it's bond-financed . . . don't take chances!



Specify NEVER-WEAR-OUT CLAY PIPE

SANFORD, FLORIDA, chose Vitrified Clay Pipe for this bond-financed project, where 22 miles of sanitary sewer lines are being installed. Clay Pipe is being used *exclusively*, because it's the one material that's sure to be good as new long after the bond issue has been retired. Chemically inert Clay Pipe is *permanently* safe against corrosion from the acids and gases found in every form of sewage—residential or industrial. It stays true to dimensions—hot or cold, wet or dry, year in and year out. And today's longer, stronger Clay Pipe, developed through industry-wide research, is easier to install than ever before. A variety of new jointing methods and materials keep it leak-proof and infiltration-proof. Take advantage of *guaranteed performance* with Clay Pipe.

Officials directing the Sanford project include:

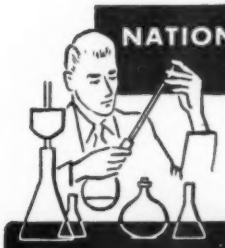
City Manager—Warren E. Knowles,

Consulting and Design Engineers—Robert M. Angas & Associates,

General Contractors—Bumby & Stimpson, McPoland Brothers, and the Hubbard Construction Co.

Vitrified CLAY PIPE

CLAY PIPE NEVER WEARS OUT!



NATIONAL CLAY PIPE MANUFACTURERS, INC.
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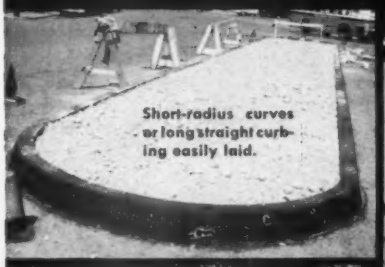
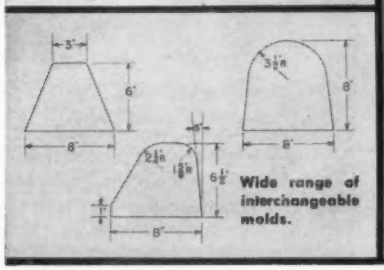
Progress in Public Health - Through Clay Pipe Research

NEW ETNYRE AUTOMATIC CURB-PAVER

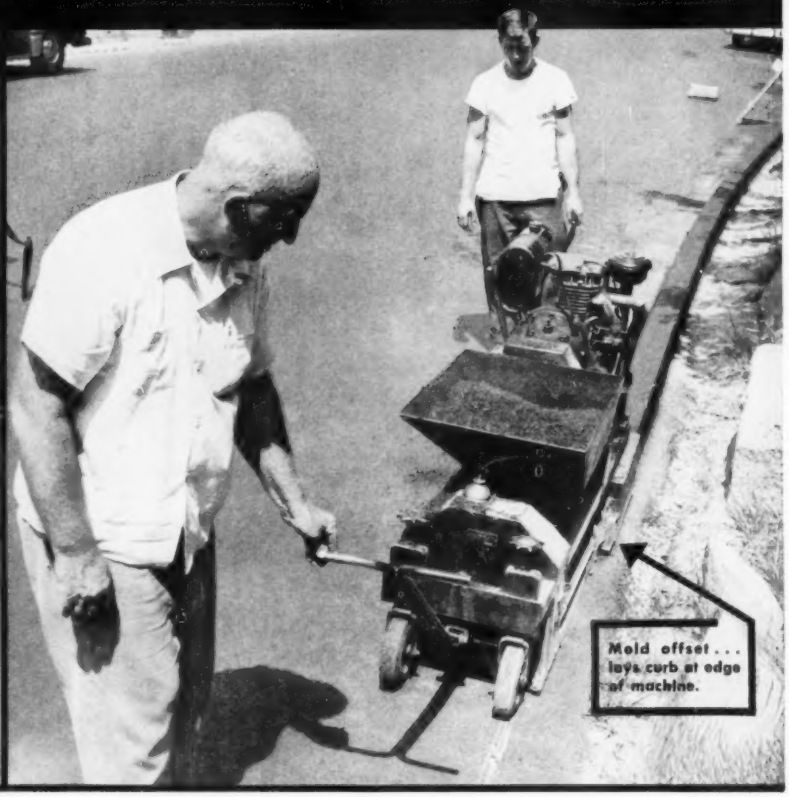


Short-radius curves or long straight curbing easily laid.

Smooth "ironed" surface is permanent, weatherproof.



Wide range of interchangeable molds.



Mold offset . . . lays curb at edge of machine.

Now you can lay beautiful weatherproof bituminous curbs at speeds of four to six ft per minute without curbing forms! The new self-propelled Etnyre Heavy-Duty Automatic Curb-Paver lays, compacts, and finishes straight or curved bituminous curbs in one fast, easy trip. Compaction is over 90 per cent, equal to that of a 12- to 15-ton roll!

The exclusive Etnyre heat-jacketed curbing mold utilizes engine exhaust gases to blast-clean and preheat paving-surface ahead of machine, eliminating tack coat in many cases. Mold's inner surface "irons" every foot of curb, producing exceptionally smooth, weatherproof finish. Exclusive offset of the mold allows you to lay curb along the very edge of the pavement or within one inch of any obstacle.

Machine weighs 750 lb, requires no rails, is easily maneuverable. The two men who operate it require no special training. Designed for fast, easy loading, cannot be overloaded. Compaction screw and screw sleeve constructed of the ultimate in abrasive-resistant steel.

If you lay curbs for streets, roads, traffic islands, or parking areas, don't delay in learning the full details of how the Etnyre Automatic Curb-Paver saves money, time, and trouble! Phone your nearby Etnyre dealer, or write E. D. Etnyre & Co., Oregon, Illinois, U.S.A.

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ETNYRE

AUTOMATIC CURB-PAVER

Municipal & Civic Publications

Publications on these pages are available from the addresses indicated in each listing and are usually free unless a price is given.

Growth of City Manager Profession in 1955

RECENT COUNCIL-MANAGER DEVELOPMENTS AND DIRECTORY OF COUNCIL-MANAGER CITIES—The International City Managers' Association, 1313 East 60th St., Chicago, Ill. 1956. 34 pp. $1.

As of January 1956 there were 1,361 municipalities and 15 counties in the United States and Canada which operated under council-manager plan. They are listed in this directory according to population, the type and date of plan adopted; the number of managers to date, and the name and date of appointment of the present manager.

The pamphlet also summarizes in figures and tables the progress of the council-manager form of government and the manager profession in 1955. The information includes the appointments and training of the managers, the municipalities which adopted or rejected the plan, and the number of enabling legislations passed.

Ordinance for Minimum Housing Standards

NIMLO MODEL MINIMUM HOUSING STANDARDS ORDINANCE—National Institute of Municipal Law Officers, 730 Jackson Place, N. W., Washington 6, D. C. 1956. 11 pp.

This ordinance recently released by the NIMLO Model Ordinance Service, has to do with the enforcement of minimum housing standards. It covers minimum health standards, provisions governing adequate ventilation, light and heating, determining acceptable occupancy of space prohibitions against substandard conditions, and duties of the Building Inspector.

30th Municipal Index

1956 MUNICIPAL INDEX—*The Purchasing Guide for City Officials published yearly by American City Magazine Corp., 470 Fourth Ave., New York 16, N. Y. 1,042 pages.* $10.

"Over quite a number of years the writer has observed that each annual edition of Municipal Index tops the previous one. This year you have certainly brought out the best edition ever—even to the bright red color of the binding." The foregoing was one of many letters from users of the Municipal Index commenting on the 1956 book.

Over 350 manufacturers present their municipal products in 835 pages. All these suppliers and all their products are amply indexed alphabetically and by products. Latest practices in the various municipal fields using these products are outlined for practical use.

In addition to all this information which makes the Municipal Index the purchasing guide for city officials, the Municipal Index also includes lists of city managers, city engineers; superintendents of water, streets, sewage treatment, parks; mayors, chiefs of police and fire, city clerks and purchasing agents, and state officials. "It is the most complete publication of this kind that I have ever seen," is typical of many of the acknowledgments.

Mosquito Control on a County Basis

FIRST ANNUAL REPORT FOR 1955 OF THE SOUTH COOK COUNTY MOSQUITO ABATEMENT DISTRICT—The South Cook Mosquito Abatement District, 308 West 147th St., P. O. Box 338, Posen, Ill. 1956. 23 pp.

This is one of the few reports issued recently on county-wide mosquito control. With charts, diagrams and illustrations, the report covers full scope of the abatement program, including its organization, operating facilities, equipment, personnel, expenditures, etc.

Excellent Review of Parking Problem Solutions

PARKING: LEGAL, FINANCIAL, ADMINISTRATIVE—A study by the Joint Committee on Urban Traffic Congestion and Parking. The Eno Foundation for Highway Traffic Control, Saugatuck, Conn. 1956. 196 pp. Free copies available from the Foundation.

In this comprehensive treatise, leading authorities examine the legal, financial, and administrative aspects of America's urban parking problems and bring some fresh insight to the subject.

The book reviews the main approaches for providing parking facilities: off-street parking, land use regulation through zoning power, or the integration of parking projects with urban redevelopment. It examines the four general methods of administering parking programs (private enterprise, public-private cooperation, municipal control, or parking authority), and the methods of financing public off-street parking (bonds, lease plan, etc.). But whatever the methods or alternatives used, the Committee concludes that the basic responsibility for a sane parking program devolves on the local government.

On every phase of the subject the publication draws concrete examples from the parking programs developed by different cities. Comprehensive statistical tables on parking requirements from the Bureau of Public Roads are also included. Since urban parking problems are here to stay, all public officials and municipal agencies should find this study profitable reading.

Subdivision Development

HOW GOOD IS OUR LAND DEVELOPMENT—Urban Land, Urban Land Institute, 1200 18th St., N. W., Washington 6, D. C. Vol. XV, No. 4, April 1956. Single copies $1; 50 cents for U.L.I. members.

A former member of the planning commission in a midwest city tells how both the city plan and homeowners suffer from the lax administration of subdivision regulations, which results in costly reconstruction projects and the use of the apportionment warrant. His recommendations call for the planning commission to retain full control of platting and physical improvements in all subdivisions and the appointment of a citizens advisory committee to help the commission in planning activities.

A Program for Neighborhood Conservation

BLUEPRINT FOR NEIGHBORHOOD CONSERVATION—Published for the Build America Better Council of the National Association of Real Estate Boards, 1737 K St., N. W., Washington 6, D. C. Revised Edition. 1956. 48 pp. Free copies available from the Build America Better Committee.

This illustrated booklet will serve as a useful reference for communities interested in neighborhood conservation. It is being distributed by the NAREB committee to mayors, city managers, municipal officials, and realtors in the interest of slum elimination and prevention. It emphasizes that neighborhood conservation is "a community effort" and outlines a coordinated approach to conserving and improving the nation's housing supply. The booklet also presents the case histories of neighborhood conservation programs in seven big cities including Los Angeles, Chicago, and New Orleans. Also included is a guide to the preparation of state legislations to enable communities to create neighborhood conservation authorities.

Asphalt Paving

MIX DESIGN METHODS FOR HOT-MIX ASPHALT PAVING (*Manual Series No. 2*). *The Asphalt Institute, College Park, Md.* 168 *pp.* $1.

A new manual containing authoritative information and instruction for the design of mixes by the Marshall, Hveem, Hubbard-Field and Smith Triaxial test methods. Test procedure and interpretation of test data are provided for each mix design method. Appendices include information on the gradation analysis of aggregates and the density and voids analysis of compacted paving mixtures.

The Government of Philadelphia from A to Z

PHILADELPHIA GOVERNMENT 1956—By Edwin Rothman, Edgar Rosenthal, Emma L. Bowman, and Leigh B. Hebb for the Bureau of Municipal Research and Pennsylvania Economy League (Eastern Division), 1321 Arch St., Philadelphia 7, Pa. 1956. 365 pp. $2.50.

This textbook-manual has fulfilled the aim of its publishers: "to provide in moderately easy reading form a description of some of the more important elements of governmental operation and organization in Philadelphia." Part I deals with the history of the city government, its legislative and executive branches, courts and city politics. Part II describes the services of the local governments in welfare housing, recreation, education, etc. Part III tells about government finance and Part IV, the administrative services.

Not written for any specific group, this work is recommended for all students, teachers, civic organizations and public officials and employees who seek general information on the subject. It should also prove a useful model for municipal agencies in preparing manuals on their own governments.

More work, in less time at low cost

Watch the smoothness of a modern Adams motor grader at work. See how easily it blades at any work speed. Take the wheel, drive it as you would your automobile... through city streets, to 25 mph... in reverse to 13 mph. Stand or sit at the controls, notice how clearly you see grade and load on the blade. With convenient power-controls you raise, lower, revolve or extend the blade to any desired position.

The heavy, box-construction, one-piece frame of this husky grader is built to resist shock and stresses. Weight is distributed to make use of full power in all gears. Big, powerful engine starts quickly in any temperature; has lugging ability to move heavy loads in tough going. Note how constant-mesh transmission gives smooth speed through all gears.

8 Forward Speeds — to 25 mph

A speed for every grading operation. You get work done fast, save time moving job-to-job. Three additional "creeper speeds" (.23 to 1.82 mph) are optional. They make it easy to rip hard-packed roads and old asphalt, root out unseen roots and stones without severe shocks, make for accurate finishing in tight places. *No other grader offers this wide range of operating speeds.*

4 Reverse Speeds — to 13 mph

Wide range of reverse speeds saves time on shuttle-grading and mixing, backing to buck snow drifts, etc.

Double-action Hydraulic Brakes. Service brake applies braking action to transmission as well as wheels; surer, safer stops, with less pedal effort.

Rubber-Mounted Engine. Vibration is not transmitted through floor to machine and operator. Means less maintenance, better efficiency.

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Select your next motor grader on the basis of *performance*. Ask your LeTourneau-Westinghouse Distributor for performance facts and specifications. Learn why Adams graders do *more* work, in *less* time, at *lower* cost.

Rugged scarifier (optional) rips up gravel, crushed stone, blacktop, sheet asphalt road and street surfaces. Has replaceable points.

A size ADAMS for every need

Model 220— 60 hp diesel engine, 14,865 lbs.
Model 330— 80 hp diesel engine, 20,500 lbs.
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TraveLoader — A high-speed, heavy-duty, self-propelled, belt-type loader for picking up materials and loading into trucks from windrows or stockpiles. Your choice of 55 hp gasoline or 60 hp diesel, 16,800 lbs.

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Water Needs for Future

FUTURE WATER SUPPLY REQUIREMENTS FOR MORRIS COUNTY—*Morris County Planning Board, Court House, Morristown, N. J. 1956. 29 mimeo. pp.; appendix 18 pp. 50 cents.*

This is a study of Morris County's future potable water requirements (in volume and distribution) and of alternative means to meeting those needs. Water needs, computed on the basis of the county's population growth up to the year 2,000, are based on per capita consumption. Population figures are broken down by municipality, watershed, and other subdivision units.

Parking Pinpointed as Influencing Competition Among Stores

PARKING AND ITS RELATIONSHIPS TO BUSINESS—*By J. T. Stegmaier, Urban Land, Vol. XV, No. 5. May 1956. Urban Land Institute, 1200 18th St. NW., Washington 6, D. C. 8 pp. $1. (50 cents to U.L.I. members.)*

This resume contains the highlights of a summary volume based on a research project aimed at finding out the relationship between parking and business. The project consisted of a series of eight studies, begun in 1951 by the Highway Research Board. The summary volume, published last month, is the work of J. T. Stegmaier, project engineer and on the staff of the U. S. Bureau of Public Roads.

In this report, Mr. Stegmaier weighs all relevant factors affecting business sales: parking, shopper attitudes, purchase habits, new facilities. Some of his major conclusions are:

"The most important factors influencing shoppers' travel habits are: (1) the total travel time from their home to the shopping district—the selection of goods available there—the number one attraction downtown.

"In the competition among individual stores within any type of shopping area, parking can be an important factor in drawing shoppers from one store to another. . . . All of these factors affecting the over-all shopping convenience and satisfaction cannot be mentioned here but among the more important are prices, modernized facilities, advertising, charge accounts, night openings, deliveries and other services. . . . Other things being equal, therefore, parking looms as a vital factor. Nevertheless, it cannot create additional purchasing power."

Proposed Highway Realignment in Morris County, N. J.

RECOMMENDED RELOCATION OF NEW JERSEY ROUTE 24 IN MORRIS COUNTY—*Morris County Planning Board, Court House, Morristown, N. J. 1955. 8 mimeo. pp. 25 cents.*

The Morris County Planning Board after several years of study has issued this report recommending a specific relocation of Route 24 within the county. With the use of diagrams, the report briefly and clearly describes the relocation plans proposed to date: (1) the preliminary plan suggested in 1950, (2) the six local master plan proposals submitted by six municipalities which straddle Route 24, and (3) the realignment route recommended by the Board in 1955.

The report also explains what the 1955 relocation plan would offer and entail in the way of land sites, building removals, and construction.

Bibliography on Public Taxation

TAX INSTITUTE BOOKSHELF—*A Bibliography (Number 49). Tax Institute, Inc., 457 Nassau St., Princeton, N. J. March* 1956. 28 *pp.* $1.

An up-to-date list of publications concerning taxation (federal, state, and local, as well as national and international). It is indexed under six main groupings with subtitles.

Progress Report from New Orleans

ANNUAL REPORT OF THE MAYOR, 1955-1956: City of New Orleans—Public Relations Office, City Hall, New Orleans, La. 72 pp.

New Orleans has issued a superb pictorial report, dedicated to the city's development program begun in 1946. It describes the program of rehabilitation and construction planned for the future with special emphasis on the downtown development now in progress and the projected 14-acre civic center. Other subjects covered include the housing rehabilitation program, the city's recreation program and street and transportation projects.

Explanation of Rent Control in New York State

THE LITTLE BOOK ON RENT CONTROL—By Alexander L. Crosby, New York Temporary State Housing Rent Commission, 280 Broadway, New York 7, N. Y. Illustrated by Elizabeth D. Logan. 1956. 20 pp. Free copies available from local rent offices or the Public Information Office of the Commission.

Written in layman's English, this little booklet is designed to enlighten both landlords and tenants on the A B C's of the New York Rent Control Act. It covers regulations governing maximum rent, rent reduction, rent increase, evictions, etc. This is the third in a series of education publications put out by the Commission. Two prior pamphlets are entitled, "The Big Four Questions in Rent Control" (for tenants), and "Instructions to Landlords for the Preparation of Applications and Reports."

Facts on Municipalities and Managers in Pennsylvania

1956 DIRECTORY OF PENNSYLVANIA COUNCIL-MANAGER MUNICIPALITIES AND MUNICIPAL MANAGERS—Information Bulletin of the Information and Advisory Service, Institute of Local Government, University of Pittsburgh, Pittsburgh 13, Pa. 1956. 25 pp. $1.

Pertinent information for both municipalities and managers is listed in this directory under three headings. Of particular interest is Part III—The Community—which tabulates each manager community according to population, area, assessed valuation, expenditures and tax rates including taxes other than property tax. In Part I—The Plan—facts are given for the 73 manager municipalities on the date of plan adoptions, the status of ICMA approval, etc. Part II furnishes data on The Manager and includes biographical notes, mailing address, telephone number, and date of present appointment.

One man with D Tournapull

cuts costs on landfill garbage disposal

One man, operating a dozer-equipped D Tournapull, can handle *all* excavating and covering operations on a city landfill disposal dump. In fact, in many cases these machines excavate and cover on several dumps, or supplement disposal work with other dirt-moving service for streets, parks, etc.

There's only one man to pay — one machine to service and maintain, one machine to buy.

Excavates disposal ditches

If eroded wasteland is available, Tournapull can employ the landfill method to fill in gullies, and eventually reclaim the land.

If dump area is flat, versatile 138 hp Tournapull digs disposal ditches of any length or size, and uses excavated material to cover dumped refuse.

Spreads, compacts, covers garbage

As garbage is trucked in, the "D" dozes it into place in the trenches. Normal back-and-forth travel of the rubber-tired rig solidly compacts refuse into minimum space.

For sanitary sealing, D Tournapull covers the garbage by one of two methods: (1) dozes dirt down from the trench walls, or (2) hauls in dirt from excavation of the next parallel disposal ditch.

Big 18:00 x 25 low-pressure tires, power-transfer differential (which automatically transfers power to the wheel on firmer footing), and positive power steer, help the "D" keep ahead of trenching and filling schedules in all kinds of weather — frequently with time to spare.

Handles odd jobs in spare time

Fast-moving, rubber-tired "D" permits making profitable use of any short waiting intervals, to handle scattered assignments. Just "say where"! Operator hops on and runs Tournapull to the next work site — cross-country, or over paved highways — at speeds to 28 mph. No waiting for trailer! No blocking or loading!

Tournapulls maintain alleys, streets, levees . . . haul and spread cinders or gravel for surfacing . . . grade parking lots . . . remove snow . . . "pinch-hit" in hauling garbage.

Consider what this versatility can mean on your city landfill, street, alley, and park maintenance programs. Get all the facts. Write, or ask your LeTourneau-Westinghouse Distributor about high-speed, electric-control D Tournapulls TODAY!

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Ordinance For Vehicle Wrecker or Towing Service Business

NIMLO MODEL ORDINANCE REGULATING VEHICLE OR TOWING SERVICE BUSINESS—National Institute of Municipal Law Officers, 730 Jackson Place NW., Washington 6, D. C. 1956. 5 pp.

This ordinance, issued by the NIMLO Model Ordinance Service, has to do with the regulating of vehicle wrecker or towing service business. It covers insurance policies for the protection of the public, setting forth duties of licensees, provisions for investigation and supervision by the Chief of Police, revocation of licenses and penalties for the violation of its provisions.

Port Employment Record

THE PORT AND THE COMMUNITY: A Report on the Economic Importance of the New York-New Jersey Port to the People of the Port District—Prepared by The Port of New York Authority, 111 Eighth Ave., New York 11, N. Y. 1956. 24 pp.

This is a statistical summary of the employment record of the New York-New Jersey Port. Port jobs are broken down into six categories (Marine Transportation, Marine Construction, etc.) with subheadings and analyzed in terms of annual average employment figures, and total annual payroll. The total annual income from port employment is broken down into 10 major expenditure items such as food, housing, medical care, etc.

FILTER PLANT EQUIPPED WITH

MOTOR OPERATED

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There are four principal uses for electric motor operated M & H Gate Valves:

1. **Facilitate opening and closing of large valves.**
2. **Control and expedite frequent operation of valves.**
3. **Simplify operation of valves installed in remote, inaccessible or hazardous locations.**
4. **Reduce operating costs and increase efficiency.**

The motor operated valves in the pipe gallery shown below are standard M & H Gate Valve design and construction. They are available in all sizes for 50, 100, 150 or 250 lbs. working pressure, and with standard accessories such as square bottom design, rollers-tracks-and-scrapers, indicators, etc. For complete information, address

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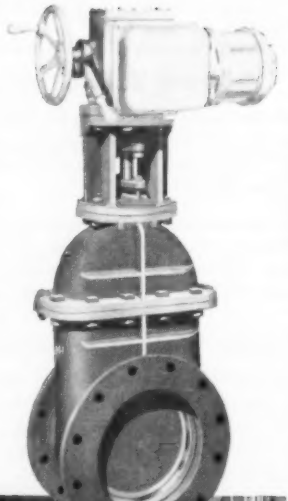

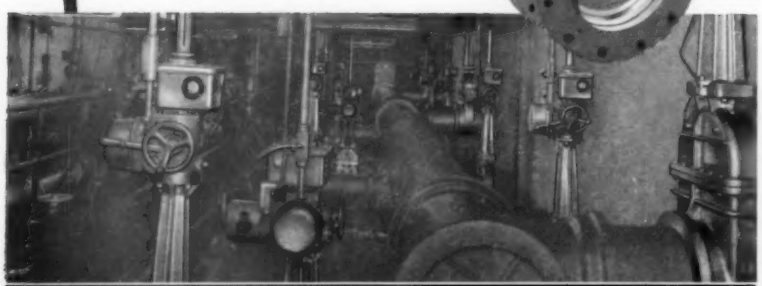

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FOR WATER WORKS • FILTER PLANTS INDUSTRY • SEWAGE DISPOSAL AND FIRE PROTECTION

Benefits of Federal Grants to West Virginia Government

FEDERAL AID IN WEST VIRGINIA: *Its Impact on State Government—By W. W. Kaempfer, Bureau for Government Research, West Virginia University, Morgantown, West Va. Publication No. 15.* 1956. 72 *pp.*

Called "the first extensive review of the part which the federal grant-in-aid has come to play in the total service program in West Virginia," this scholarly survey also has wider applications. It spotlights the classic discussion: the impact of expanding federal function on state power. The book relates the history of federal aid in West Virginia and describes the operation of federal grant-in-aid programs in the state. It examines the attitude of the West Virginia government towards federal aid, and the dependence of state finance and services on federal money.

Mr. Kaempfer's conclusions are in general applicable to the other states. In particular he has an important answer for those who are concerned with diminishing state autonomy: the federal aid program has been so closely woven into the fabric of the state government that the dependence of the state on the federal portion assumes a vitality of its own. He concludes that current levels of federal aid cannot be dispensed with and their effect has been almost wholly beneficial" and "while an increase is always welcome, a decrease is all but ruled out." The state has only two alternatives to federal aid: (1) to increase state taxation, or (2) to dispense with the present level of state services.

Public Housing and Urban Redevelopment in Baltimore

QUARTERLY REVIEW. Housing Authority of Baltimore City, 709 East Eager St., Baltimore 3, Md. Autumn 1955-Winter 1956. Vol. VIII, No. 4 and Vol. IX, No. 1. 21 pp.

An unique publication for a housing authority, the *Review* is published four times annually by the Housing Authority of Baltimore City, which serves as both the public housing and urban redevelopment agency for the city.

The present issue reports on the progress of urban renewal program in Baltimore, the progress of city's relocation service in slum clearance and removal of war housing. It reviews the home-building trends in Baltimore metropolitan area analyzed over a six-year period, and the public housing program to date. Anyone interested in obtaining a clear view of Baltimore's present progress in its city renewal program will find the articles contained here of great informative value.

Effective Format Makes This a Good Report

IMPROVING LEGISLATIVE PRINTING—Massachusetts Federation of Taxpayers Associations, Inc., 11 Beacon St., Boston 8, Mass. 1956. 20 pp. Free.

This is an imaginative presentation of pertinent ideas for reforming an archaic system of printing legislative bills in the Massachusetts Legislature. The methods of presenting the arguments in line drawings and picturesque lettering are so effective yet simple that municipal agencies or civic groups planning reports of their own that aim to convince the public of measures to be followed should read over this report.

Plan for a Canadian Town

MELFORT LOOKS AHEAD: A GUIDE FOR COMMUNITY DEVELOPMENT—Prepared by The Community Planning Branch, Department of Municipal Affairs, Regina, Saskatchewan, Canada. 1956. 74 pp.

This is the first overall community development program prepared by the Community Planning Branch of the Department of Municipal Affairs of the Province of Saskatchewan. The program provides comprehensive planning services to municipalities in Saskatchewan on a fee basis. Briefly, this service entails a five-year contract with an annual fee of about 15 cents per capita the first year and 10 cents per year after that. The fees, of course, are but a fraction of the cost of the service which is provided.

The Branch makes the necessary studies and suggestions but final recommendations are made by the local planning groups for policy determination by the local council. The Branch continues as consultant to the town during the contract period.

Making Social Security Work

SOCIAL SECURITY AND PUBLIC POLICY—By Eveline M. Burns. McGraw-Hill Book Company, Inc., 330 West 42nd St., New York 36, N. Y. Economics Handbook Series. 1956. 291 pp. $5.50.

Written primarily as a survey course for students, this work will be of value to all public officials in implementing social security programs on all levels. It explores the important facets of social security from the "problem" standpoint. Professor Burns, a noted university lecturer on the subject, has, on several occasions, served as consultant to the federal government on the social security program.

In her present work, she considers four important groups of questions which must be answered in every social security system. Part I discusses the nature and amount of security benefits and the conditions governing their receipt. Part II considers the choices of risks for which social responsibility will be accepted (e.g., old age, unemployment, etc.). Part III deals with the financing of social security programs, and Part IV the administrative issues.

Extensive Analysis of Election Administration

ADMINISTRATION OF ELECTIONS IN LOS ANGELES CITY, COUNTY, AND THE STATE OF CALIFORNIA—*Office of the City Clerk of Los Angeles, Election Division, Room 803, City Hall, Los Angeles 12, Calif.* 1956. *Free copies available to election administrators, government research bureaus, libraries and universities, from City Clerk Walter C. Peterson.*

This comprehensive review of the election process in Los Angeles and the State of California comes with maps, charts, an extensive bibliography, and reference data. It covers federal, state, county, and municipal elections, administrative organizations, political subdivisions, registration, balloting, and tabulation of returns. Appendix B contains very complete election data. Federal, state, county and municipal offices are listed according to the type of election, terms of office, qualifications, and constitutional provisions. The voting pattern of Los Angeles and California in primary and general elections up to 1955 is broken down according to registration and voting figures.

Traffic Ordinance

TRAFFIC ORDINANCE FOR WASHINGTON CITIES—Association of Washington Cities, 250 Smith Hall, University of Washington, Seattle 5, Wash. Information Bulletin No. 9. March 1956. 40 pp.

This bulletin presents a traffic ordinance written primarily for Washington cities but it may be of value to cities and towns in other states. The ordinance is based on the 1953 revision of the Model Traffic Ordinance of the U. S. Bureau of Public Roads and has been adapted to the Washington State Traffic Code following the line of recent legislative enactments. It supersedes an earlier ordinance adapted from the Model Traffic Ordinance in Report No. 107 issued in 1950 by the Association and the Bureau of Governmental Research and Services.

Plan for New Cultural Center in New York City

LINCOLN SQUARE SLUM CLEARANCE PLAN—*By the Committee On Slum Clearance, Randall's Island, New York 35, N. Y.* 1956. 72 *pp.*

A redevelopment plan for 18 blocks in midtown Manhattan, is the subject of this pictorial report. Principal uses in the plan are to be cultural facilities, including a new opera house to replace New York's Metropolitan Opera House; a new concert hall to replace Carnegie Hall, plus a new theater, library, museum, etc. It contains effective chart and map presentations covering every important phase of the slum clearance and redevelopment program under Title I of the Housing Act of 1949, including tenant data, land use, traffic and utilities.

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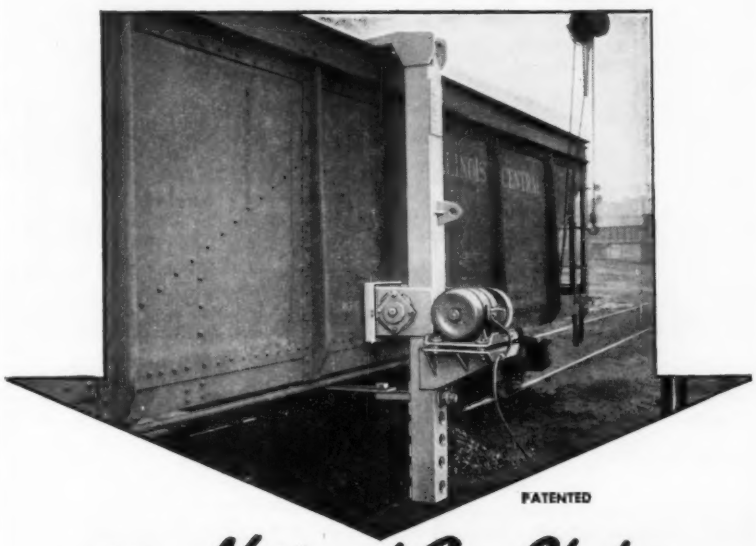

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Neighborhood Conservation Program for Detroit

NEIGHBORHOOD CONSERVATION: *A Ten-Year Investment and Program to Eliminate Deterioratаion and Prevent Blight and Slums in Detroit's 53 Middle-Aged Neighborhoods—City Plan Commission, Detroit, Mich.* 1956. 13 *mimeo pp. Appendix* 3 *pp.*

This report describes a comprehensive neighborhood conservation program developed by the City Plan Commission and the Committee For Neighborhood Conservation And Improved Housing for 53 blighted areas in Detroit. The proposal involves two types of conservation projects: (1) neighborhoods selected for major public improvements with federal aid, and (2) neighborhoods selected for minimum public improvements to be paid for by the city. It outlines the four stages of action projected for the 10-year program. Also included are data of cost estimates for public and capital improvements, staff requirements and their salaries.

Guide for Planning Sewerage Facilities

GUIDING MUNICIPAL GROWTH: SEWAGE—*New Jersey Taxpayers Association, Inc.*, 414-417 *Broad St., Bank Bldg., Trenton 8, N. J.* 1956. 15 *pp. Free copies available to state, county, and local officials in New Jersey; others,* $1.

This guide is intended to help officials and citizens in making decisions concerning community sewerage problems and to aid in planning for new sewerage facilities. It covers physical planning, methods of organizing and financing.

Future Employment Estimates for New York City

EMPLOYMENT CHANGES IN NEW YORK CITY —*Bulletin of the Department of City Planning, 27th Floor, Municipal Building, New York City, N. Y. April* 1956 *Free.*

In this report, the Department of City Planning has prepared estimates for New York City's major employment categories prior to 1950 and developed projections of future employment figures up to 1960 and 1970. Employment estimates are broken down according to industrial, manufacturing, and nonmanufacturing groups.

On the future working population of New York, the report makes these predictions:

"If New York City increases its working population, it will do so at a slower rate than in earlier decades of high employment, and slower than the expected employment rise in some newer urban areas of the South and West.

". . . New York City's land, floor space, and transit 'envelope,' which must contain and serve its work force, cannot now easily expand to meet pressures for additional space. Consequently, it will be necessary to develop objective standards of employment densities and to concentrate particular attention on improving old sections and stimulating new and underutilized areas of the city to absorb some categories of employment activities."

Other Reports Received

Administration and Government

PENNSYLVANIA—1956 Directory of Pennsylvania Council-Manager Municipalities and Municipal Managers. Prepared by the Institute of Local Government, University of Pittsburgh, Pittsburgh 13, Pa.

Annual Reports

EAST WILLISTON, N. Y.—1955 Annual Report.

MUSKEGON, MICH. — 1955 Annual Report and Plans for Tomorrow. Prepared by the Commissioners of Muskegon.

NORTH ADAMS, MASS.—1955 Annual Report.

OGLESBY, ILL.—Annual Report, May 1, 1955 to April 30, 1956.

SYRACUSE, N. Y.—1955 Annual Report.

TOLEDO, OHIO—1955 Annual Report.

WESTMONT, QUEBEC—1955 Annual Report.

Education

GENERAL—The State and Publicly Supported Libraries. Prepared by the U. S. Department of Health, Education, and Welfare, Office of Education. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 55 cents.

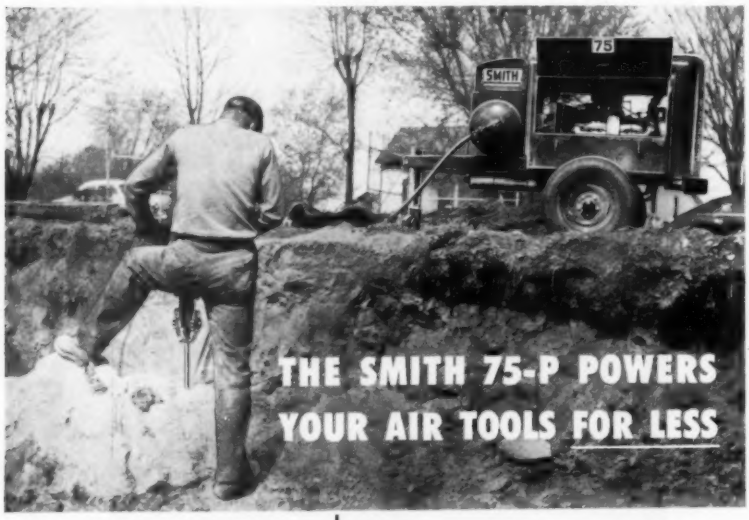
NEW YORK, N. Y.—Our Public Schools, Exploring New York. Report of the Superintendent of Schools, 1954-1955. Illus.

Finance and Taxation

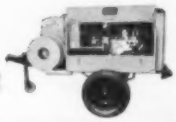
COLORADO SPRINGS, COLO.—1955 Annual Report. Available from the Office of the City Auditor.

MINNEAPOLIS, MINN.—1956 Financial Statistics. Issued by the Board of Estimate And Taxation, City Hall, Minneapolis.

NEW HAVEN, CONN.—Assessment of Real Estate. Prepared by the New Haven Taxpayers Research Council, Inc., 151 Court St., Room 403, New Haven 10, Conn.



SMITH 120-P COMPRESSOR



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Ask any Smith Compressor owner about economy! He'll tell you how the Smith 75-P replaces big compressors on scores of jobs—*adds to job profits!* The 75-P operates one heavy-duty paving breaker—two medium-duty paving breakers—or one 45-lb. rock drill. Nearly all engine and compressor parts are instantly available at reasonable cost from your Dodge Truck dealer. The 75-P is powered by a Chrysler Industrial Engine, using 3 cylinders for power, 3 for compression. Designed for high compression with large valve area, smooth carburetion. Super-finished bearings and pistons; water-jacketed discharge area. *Send coupon for free literature.*

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NEW ROCHELLE, N. Y.—Auditor's Annual Report, 1955. Issued by the Office of the City Auditor, City Hall.

PENNSYLVANIA—Pennsylvania Local Government Taxes Levied Under Act 481 In 1954. Issued by the Commonwealth of Pennsylvania, Department of Internal Affairs, Genevieve Blatt, Secretary, Harrisburg, Pa.

SALT LAKE CITY, UTAH—1955 Annual Financial Report. Prepared by Louis E. Holley, City Auditor.

SAPULPA, OKLA.—Proposed Budget for the Fiscal Year 1956-7. Prepared by the City Manager's Office, City Hall.

Laws and Legal Decisions

SOUTH CAROLINA—Organization and Jurisdiction of the Courts of South Carolina. Prepared by Glenn Abernathy, Bureau of Public Administration, University of South Carolina.

Personnel

NEW ORLEANS, LA.—1955 Annual Report of the City Civil Service.

VIRGINIA—Salaries of Municipal Officials In Various Virginia Towns. Prepared by the League of Virginia Municipalities, 905 Travelers Bldg., Richmond 19, Va. $1.

Planning, Housing and Zoning

ALLEN COUNTY, IND.—1955 Annual Operations Report. The Citizens' Civic Association, Inc. and Citizens' Council, 608 Fort Wayne Bank Bldg., Fort Wayne, Ind.

CHARLESTON COUNTY, S. C.—How Shall We Grow? A preliminary report prepared by the Charleston County Planning Board, Room 434, the Center, Charleston, S. C. Charts. Maps. 83 pp. $1.

CHICAGO, ILL.—1955 Residential Construction and Related Data in the Chicago Metropolitan Area. The Housing and Redevelopment Coordinator, City of Chicago, 69 W. Washington St., Chicago 2, Ill.

——Relocation in Chicago, 1955. Office of the Housing and Redevelopment Coordinator, City of Chicago.

GENERAL—1956 Prospectus of the Inter-American Housing Center. Prepared by the Division of Housing and Planning, Pan American Union, Washington, D. C.

GREENWICH, CONN.—The People of Greenwich, A Study of Population Growth and Characteristics as of 1950. Prepared by the Planning and Development Commission, Greenwich, Conn.

OAKLAND, CALIF.—1954-1955 Annual Report of the City Planning Commission.

WASHINGTON, D. C.—Annual Report of the National Capital Housing Authority, for the fiscal year ended June 30, 1955.

Public Safety

AUSTIN, TEXAS—1955 Annual Report of the Fire Department.

Traffic

WASHINGTON—Washington Traffic Statutes. Prepared by the Association of Washington Cities in cooperation with the Bureau of Governmental Research and Services, University of Washington, Seattle 5, Wash.

Urban Renewal

SAINT PAUL, MINN.—New Life in Saint Paul. Prepared by the Office of the Mayor, Executive Department, 347 City Hall and Court House, St. Paul 2, Minn.

Populace Backs Local and State Anti-Litter Laws

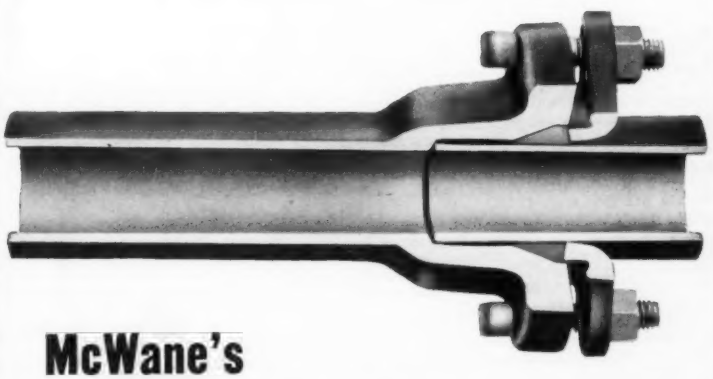
EIGHTY-SIX per cent of the American people think that litterbugs should be fined to the full extent of the law, according to a nationwide public opinion poll completed by the Gallup organization.

The survey, conducted on behalf of Keep America Beautiful, Inc., shows that men and women of all age groups everywhere share the same views about litterbugs. However, Southerners (80%) appear to be more tolerant.

About two out of five people across the nation know of some campaign or program for the prevention of litter. Best known are efforts of municipalities or state and county programs.

Although more than 40 states now have anti-littering laws in effect, most communities still find the enforcement of these laws an almost superhuman task, according to the survey report, because of the countless miles of highways, beaches, parks, and other public areas which are wide open to littering.

Quick Shipment!



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But, it has few joints to make, lower construction costs. Every time you lay a pipe, your line grows 20-feet longer.

Service connections are made with standard corporation cocks for water and standard No-Blo tees for gas. Standard strap saddles or service clamps can be used if preferred. Write or telephone nearest McWane Sales Office.

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Conventions—When and Where

(Continued from page 200)

Oct. 18-19—Green Bay, Wis.
League of Wisconsin Municipalities. Annual Convention (Hotel Northland). Exec. Sec., Ed Johnson, 30 East Johnson St., Madison 3, Wis.

Oct. 21-23—Wichita, Kans.
Kansas Association of Municipal Utilities. Annual Convention (Broadview Hotel). Asst. Sec., A. D. McGuire, P. O. Box 99, Overland Park, Kans.

Oct. 21-23—Asheville, N. C.
League of North Carolina Municipalities. Annual Convention (George Vanderbilt Hotel). Exec. Dir., Mrs. Davetta L. Steed, 1009 Raleigh Bldg., Raleigh, N. C.

Oct. 21-24—Mobile, Ala.
American Water Works Association—Alabama-Mississippi Section. Annual Meeting (Battle House). Exec. Sec., Irving E. Anderson, District Engineer, U.S.G.S., P. O. Box 2052, Jackson, Miss.

Oct. 22-24—Atlanta, Ga.
Georgia Municipal Association. Annual Convention (Dinkler-Plaza). Sec., Zach Arnold, 1403 C&S National Bank Bldg., Atlanta, Ga.

Oct. 22-24—New York, N. Y.
National Association of Housing and Rdevelopment Officials. Annual Convention (Hotel Statler). Exec. Dir., John D. Lange, 1313 E. 60th St., Chicago 37, Ill.

Oct. 23-26—San Diego, Calif.
American Water Works Association—California Section. Annual Meeting (U. S. Grant Hotel). Sec., H. J. Ongerth, Engineer, State Department of Health, 2180 Milvia St., Berkeley, Calif.

Oct. 24-26—Baltimore, Md.
American Water Works Association—Chesapeake Section. Annual Meeting (Sheraton Belvedere). Sec., C. J. Lauter, 6955 33rd St. NW., Washington 15, D. C.

Oct. 25-27—Lubbock, Texas
League of Texas Municipalities. Annual Convention (Lubbock Hotel). Exec. Dir., E. E. McAdams, 105 W. 14th St., Austin 1, Texas.

Oct. 31-Nov. 2—Bluefield, W. Va.
American Water Works Association—West Virginia Section. Exec. Sec., Hugh Hetzer, West Virginia Water Service Co., 179 Summers St., Charleston 1, W. Va.

***Nov. 1-2—Omaha, Nebr.**
Nebraska Sewage & Industrial Wastes Association. Annual Meeting (Castle Hotel). Sec.-Treas., V. J. Lechtenberg, 614 Standard Oil Bldg., Omaha 2, Nebr.

***Nov. 7-9—Old Point Comfort, Va.**
American Water Works Association—Virginia Section. Annual Meeting (Hotel Chamberlin). Sec.-Treas., J. P. Kavanagh, 213 Carlton Terrace Bldg., Roanoke, Va.

***Nov. 10-12—Atlantic City, N. J.**
Adult Education Association of the United States. Annual Convention (Chalfonte-Haddon Hall). Administrative Coordinator, Malcolm S. Knowles, 743 N. Wabash Ave., Chicago 11, Ill.

***Nov. 11-13—Little Rock, Ark.**
Arkansas Municipal League. Annual Convention (Hotel Marion). Exec. Dir., Glenn G. Zimmerman, 416 Maple St., North Little Rock, Ark.

***Nov. 11-14—Memphis, Tenn.**
National Municipal League. National Conference on Government (Peabody Hotel). Exec. Dir., Alfred Willoughby, 47 E. 68th St., New York 21, N. Y.

***Nov. 11-13—Springfield, Ill.**
Illinois Municipal League. Annual Convention (Hotel Leland). Exec. Dir., A. L. Sargent, 537 S. 4th St., Springfield, Ill.

***Nov. 11-18—Tucker's Town, Bermuda**
American Concrete Pressure Pipe Association. Annual Convention (Castle Harbour Hotel). Managing Dir., Howard F. Peckworth, 228 N. LaSalle St., Chicago 1, Ill.

***Nov. 12-14—Charlotte, N. C.**
American Water Works Association—North Carolina Section. Annual Meeting (Charlotte Hotel). Exec. Sec., W. E. Long, Jr., Chief, Pollution Control Section, State Stream Sanitation Committee, State Board of Health, P. O. Box 2091, Raleigh, N. C.

Nov. 12-15—Miami, Fla.
International Association of Fire Chiefs. Annual Conference (Biscayne Terrace Hotel). Sec.-Mgr., B. Richter Townsend, Hotel Martinique, Broadway at 32nd St., New York 1, N. Y.

***Nov. 12-16—Atlantic City, N. J.**
American Public Health Association. Annual Meeting (Convention Hall). Exec. Sec., Reginald M. Atwater, M.D., 1790 Broadway, New York 19, N. Y.

***Nov. 13-16—Atlantic City, N. J.**
New Jersey State League of Municipalities. Annual Convention (Chalfonte-Haddon Hall). Exec. Dir., Mrs. Madeline S. Frost, 603 Trenton Trust Bldg., Trenton, N. J.

Nov. 13-16—Los Angeles, Calif.
National Tax Association. Annual Convention (Biltmore Hotel). Sec., Ronald B. Welch, P. O. Box 1799, Sacramento 8, Calif.

***Nov. 15-17—Fort Lauderdale, Fla.**
Florida League of Municipalities. Annual Convention (Lauderdale Beach Hotel). Exec. Sec., Gordon T. Butler, 401 Exchange Bldg., Jacksonville, Fla.

***Nov. 25-28—St. Louis, Mo.**
American Municipal Association. Annual Meeting (Park Plaza-Chase). Exec. Dir., Patrick Healy, Jr., 1625 H St., NW., Washington 6, D. C.

(Continued on page 211)

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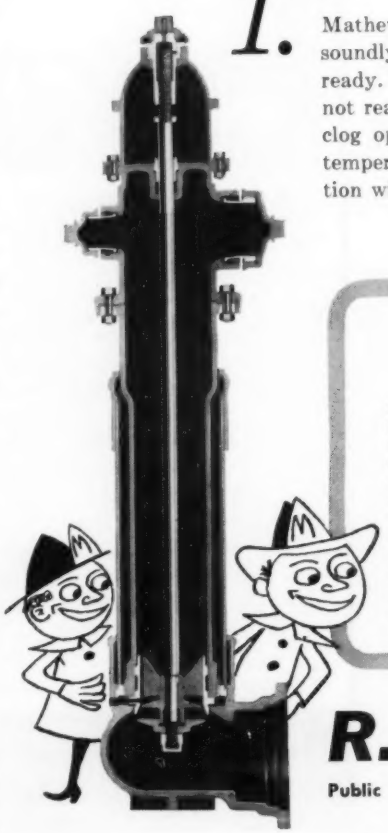
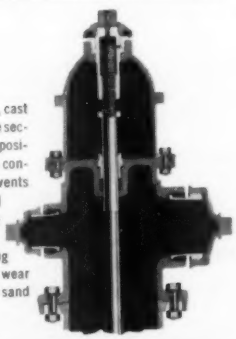
1. **Will they be ready for instant use in an emergency?**

Mathews Hydrants are so simply and soundly constructed that they are always ready. Water, ice and sandy deposits cannot reach key parts to rust or freeze, or clog operation. In any weather and all temperatures, Mathews Hydrants function with a minimum of maintenance.





Stuffing box plate, cast integral with nozzle section, provides a positively leakproof construction. It prevents any water or sand from reaching the operating thread. No rusting, freezing or clogging. No wear on thread through sand abrasion.

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Philadelphia 5, Pa.

Nov. 25-29—Miami Beach, Fla.
NATIONAL ASSOCIATION OF ASSESSING OFFICERS. Annual Convention (Hotel Seville). Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago 37, Ill.

Nov. 26-28—Colorado Springs, Colo.
AMERICAN WATER WORKS ASSOCIATION—Rocky Mountain Section. Annual Meeting (Broadmoor Hotel). Sec.-Treas., Jack W. Davis, 301 Continental Oil Bldg., Denver, Colo.

***Nov. 27-30—Atlantic City, N. J.**
AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS. Annual Convention (Traymore Hotel). Exec. Sec., A. E. Johnson, 917 National Press Bldg., Washington 4, D. C.

***Dec. 2-5—Philadelphia, Pa.**
PENNSYLVANIA LEAGUE OF CITIES. Annual Convention (Bellevue-Stratford). Exec. Dir., John N. O'Neil, Room 302, City Hall, Harrisburg, Pa.

***Dec. 4-7—Chicago, Ill.**
AMERICAN PUBLIC WELFARE ASSOCIATION. Annual Convention (Edgewater Beach Hotel). Exec. Dir., Loula Dunn, 1313 E. 60th St., Chicago 37, Ill.

Jan. 28-Feb. 2, 1957—Chicago, Ill.
AMERICAN ROAD BUILDERS' ASSOCIATION. Annual Convention and Road Show (Chicago Amphitheater). For further information address the ARBA, World Center Bldg., Washington 6, D. C.

***March 17-21—San Francisco, Calif.**
AMERICAN SOCIETY OF PLANNING OFFICIALS. Annual Convention (Sheraton Palace). Exec. Dir., Dennis O'Harrow, 1313 E. 60th St., Chicago 37, Ill.

***March 21-23—Chicago, Ill.**
AMERICAN SOCIETY FOR PUBLIC ADMINISTRATION. Annual Convention (Hotel Sherman). Sec.-Treas., Miss Laverne Burchfield, 1313 E. 60th St., Chicago 37, Ill.

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about fire hydrants:

2. Can the hydrant be quickly replaced if broken in a traffic accident?

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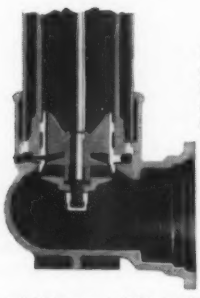

Main valve, true compression type, opens against and closes with water pressure. The higher the pressure, the tighter the valve. When hydrant is broken in traffic accident, there's no leakage with consequent dangerous loss of pressure.

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Water Supply Survey

B. P. BARBER AND ASSOCIATES, consulting engineers, will make an extensive survey of the municipal water system of Columbia, S. C. The survey will cover estimates of future water requirements of the Columbia area, 6 miles in radius, with recommendations for improvements to raw water, treatment, storage and distribution facilities, including cost estimates. The firm will also make a study of waterworks operation costs and rates, including an evaluation of Water Department physical properties, analyses of unit costs of treatment and distribution, and of current and future water revenue bonds and their amortization.

Galvanic Corrosion—

(Continued from page 191)

use nickel-bronze chambers only where experimental tests show them to be helpful, but never on meters having iron frost bottoms.

Although other combinations are used that produce various degrees of galvanic action, they are not as common as those already mentioned. However, the use of monel metal and stainless steel does bear consideration. In general, monel is slightly cathodic to bronze, but tests at the University of Michigan showed a slight voltage potential in the favor of bronze at the start. Within 24 hours, this had almost disappeared. It is probably that the monel, with its polarizing tendency, would have shown a condition of almost complete balance were the test extended.

Active stainless steel is similar to cast iron in the galvanic series. If the stainless steel is passivated, the galvanic properties when coupled with bronze protect the stainless steel at the expense of the bronze. However, rubbing action or scratches could remove the passivated surface, thus removing the protection. Additional considerations plus the one already mentioned warrant that for small submerged meter parts, there is nothing stainless steel will accomplish that monel will not do better, and with less chance of trouble.

Another important item is quality control. Bronze castings made from impure metal containing traces of aluminum may corrode rapidly. Cleaning with acid may also result in trouble if all traces of the acid are not removed from the pores of the metal. It is believed, however, that all meter manufacturers are watching quality control carefully.

NOW! A complete line of equipment to meet your exact collection needs!

LOAD-PACKERS® The original packing-type refuse collection units! Preferred by over 2600 municipalities for fast loading, positive compaction, low maintenance costs, better service. Fully hydraulic for long life . . . fully enclosed for greater sanitation. Unmatched for narrow alley operation. Write for booklet W-171 that describes all six Load-Packer models, with capacities from 10 to 24 cubic yards.

SPEED-PACKERS® First continuous loader that crushes, shreds and compacts to handle far greater payloads! Non-selective... handles tires, lumber, concrete blocks, tree limbs, anything the Speed-Packer can get its 46 teeth into. Exceptionally low maintenance costs . . . combines speed with safety. New 16 and 20 cubic yard models are described in booklet W-195. Write for your copy.

Modern refuse collection service costs less with Gar Wood's advanced and complete line of equipment. You can choose the exact size and type you need to handle *your* collection requirements best. All eight models are built and backed by Gar Wood, the originators of packing-type collection equipment. All are designed for low maintenance costs . . . many parts are interchangeable. And, all are sold and serviced by one world-wide organization of leading truck equipment distributors.

Find out how you can provide modern refuse collection service at less cost with the world's first and only complete line of equipment. Call your Gar Wood-St. Paul truck equipment distributor, or write to: Customer Service Department, Gar Wood Industries, Inc., Wayne, Mich.

NEW SPEED-PACKER TAILGATE Available as Replacement Part!

Your present LP-216 and LP-220 Model Load-Packers can be easily converted into continuous loaders. Ask your dealer about Gar Wood's revolutionary Speed-Packer Conversion Plan.

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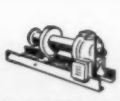


Gar Wood Winches

Gar Wood-Buckeye Spreaders

Purchasing News

Information for officials interested in equipment and services for the construction, operation and maintenance of municipal utilities

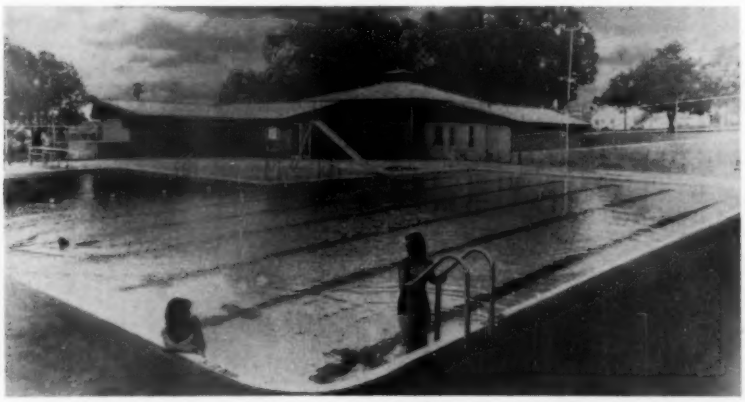
Battery AD-X2 Case Dismissed

"It is ordered that the complaint herein be, and it hereby is, dismissed," ruled the Federal Trade Commission on May 16, 1956 relative to the 8-year wrangle over the values of Battery AD-X2.

The National Bureau of Standards condemned the product, made and sold by Pioneers, Inc., Oakland, Calif., in 1949. On February 24, 1953, the Post Office Department issued a fraud order against the maker at the recommendation of the National Better Business Bureau. Following hearings by the Senate Small Business Committee, concluded August 18, 1953, the Post Office fraud order was rescinded on the basis that "Mr. Ritchie's advertising is conservative and that his product does just exactly what his advertising claims."

FTC dismissal of this long drawn out complaint emphasized that "the overwhelming weight of the user testimony is with the respondents," and that these consist mostly of plant superintendents, shop foremen, chief electricians, and master mechanics. "No other case has come to the examiner's attention in which so large a volume of substantial and reliable user testimony was adduced. The testimony of these witnesses in substance was that they had made extensive use of respondents' products in their respective plants and motor vehicles, and that they had observed definite and substantial benefits resulting from its use; that the product caused their batteries to last longer, take a charge better, operate more efficiently, with less sulfation, less heat, less water loss, less 'gassing' of the electrolyte, less shedding of active materials from the plates, etc. There was substantial testimony to the effect that through the use of the additive battery costs had been materially reduced. Numerous instances were cited by the witnesses in which batteries which apparently had lost their usefulness and were about to be discarded were, through the use of the additive, reclaimed and restored to active service."

Steel Swimming Pools Need Less Maintenance



A U.S.S. steel pool installed in the Mallory Playfield, Dayton, Ohio.

Only an occasional coat of paint is needed to maintain a USS steel pool. Smaller pools for municipal playgrounds are easily assembled, and are completely adaptable to many widely-known filtering and recirculating purification systems. There are never any worries about cracks or seepage, and there are no rough walls to scuff knees and elbows.

The smooth, steel surface of a USS pool is easy to keep clean, and is unaffected by frost action. In assembling, the light-weight sections fit together easily, and special features provide for simple adjustment to perfect line and level.

Additional details on steel swimming pools may be obtained from the American Bridge Div., United States Steel Corp., 525 William Penn Pl., Pittsburgh, Pa. Write directly, or you may use the Post Card on the insert following Page 52. Circle No. 776.

Announces Plant Expansion

K. G. Merrill, president of the M. B. Skinner Co., South Bend, Ind., announces plans for a new building that is expected to increase the company's floor space by more than 30%. In addition to providing expanded production facilities, the building will house a complete testing and development laboratory with adjacent engineering offices. The 58-year-old firm manufactures clamps, saddles, and other malleable iron and steel fittings for municipal waterworks, and for the gas and petroleum industries.

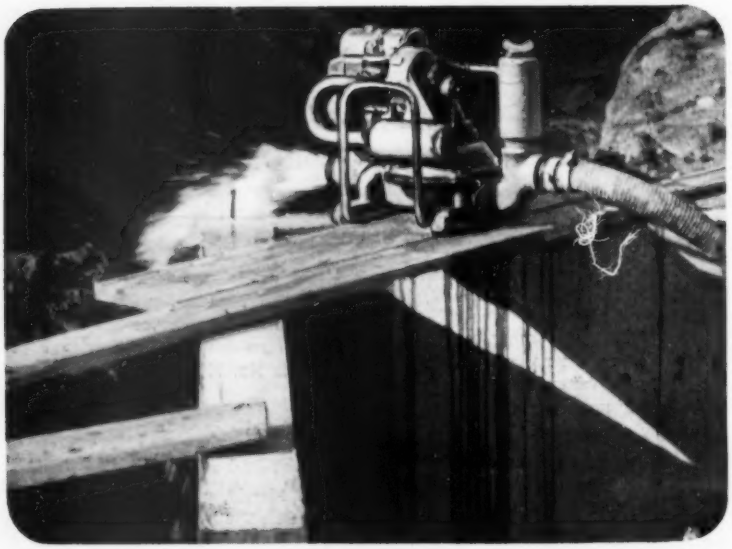
Mack Trucks to Merge Subsidiary Companies

P. O. Peterson, president of Mack Trucks, Inc., 350 Fifth Ave., New York, N. Y., announces the recent merger of several of the firm's wholly-owned subsidiary companies under the parent name. This streamlining of operations is expected to increase over-all efficiency and reduce administrative costs.

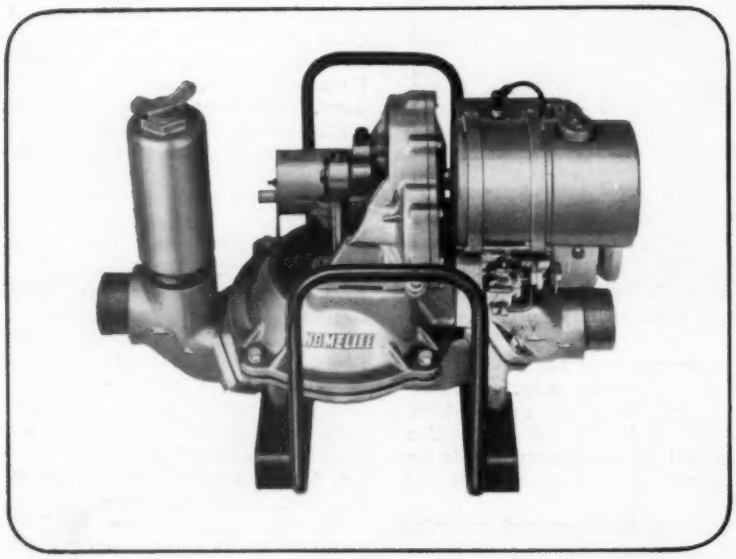
Mack affiliates that will be merged under the name Mack Trucks, Inc., include the Brunswick Ordnance Corp., Mack Mfg. Corp., Mack Motor Truck Corp., Mack Motor Truck Co., Mack Brothers Motor Car Co., and International Plainfield Motor Co. Two other Mack subsidiaries, Mack Trucks of Canada, Ltd., and Mack Electronics Div., Inc., will retain their present identities.

Another announcement from Mack Trucks, Inc., informs us of the appointment of nine new distributors. They are:

Ashtabula Truck Sales & Service, Ashtabula, Ohio; Bulldog Trucks, Inc., Redding, Calif.; Burns Mack Sales, Clearfield, Pa.; Harris Motor Car Co., Cape Girardeau, Mo.; Hastings Motor Truck Co., Hastings, Neb.; Holman Motor Co., Inc., Mt. Vernon, Ill.; Reno Equipment Sales Co., Reno, Nev.; Snowden Mack Service, Inc., Beaumont, Tex.; and Texarkana Mack Sales, Texarkana, Ark.



It's here!
The new heavy-duty diaphragm pump that's light enough to carry



Here's the diaphragm pump that goes most easily to the job and does more when it gets there. Specifically designed for continuous, heavy-duty work, this Homelite pump will dewater an area at a 5000 g.p.h. clip, then keep right on going to handle seepage in the thickest mud, muck and sand. Yet, because it weighs only 120 pounds, it gets to the job fast . . . even over the roughest terrain.

The entire unit is built for long, trouble-free operation. Manual throttle control adjusts engine speed for full-capacity pumping or handling small seepage flow . . . gives greater fuel economy and prolongs engine life. Ball and roller bearings protect engine and pump from excessive wear. Totally enclosed reduction gears run in oil. Tough, oil-resistant diaphragm can be easily replaced in ten minutes right on the job.

For more information or a demonstration on your job, write or call your nearest Homelite representative.

NEW HOMELITE
Carryable
DIAPHRAGM PUMP

Model 20DP3-1 has guaranteed total lift up to 28′ and total head up to 50′, including friction.

HOMELITE

A DIVISION OF TEXTRON, INCORPORATED
107 RIVERDALE AVENUE
PORT CHESTER, NEW YORK

International Previews New Equipment

Handy, many-dutied little tractors like this were among the new models that have special municipal interest.

New styles in crawler-mounted tractors and front-end loaders went on parade recently at a special press preview held at the Dundee (Ill.) proving ground of the International Harvester Co. Of special interest to municipalities were the International TD-6 with a 23% boost in horsepower; the re-designed TD-9, with 66-hp, designed for use with a Drott skid-shovel or four-in-one bucket; the big TD-14, with 78.5-hp, rated as one of the most powerful crawler tractors in its class; and the TD-18 diesel crawler, with improved operator visibility.

Also featured at the press preview was the International Model 12 Payloader, a

The new building forms an impressive backdrop for the visiting newsmen.

track-mounted version of the Hough rubber-tire Payloader. The Model 12 is mounted on an International TD-9 track assembly, with extended track frames equipped with 15-inch-wide, low-profile grouser shoes. The Payloader is 7 feet-2 inches wide, has a ground clearance of 11 feet-4 inches, and weighs about 20,800 pounds.

Speed and maneuverability are special features of the new Model 12. Three forward speeds range from 0 to 10.1 mph, and three reverse speeds range from 0 to 13.1. A 1¾-cubic-yard hydraulically-actuated bucket features 40° tip-back at ground level and an 8 foot-10 inch discharge height, as well as high break-out.

Additional information on the new International Payloader and improved crawler-mounted tractors, may be obtained from the INTERNATIONAL HARVESTER CO., 180 N. MICHIGAN AVE., CHICAGO 1, ILL. Write directly, or you may use the Post Card on the insert following Page 52. Circle No. 753.

Solves Psychoda Fly and Other Sewer Problems

Trickling filter plants for the first time can get real relief from the recurring annoyance of the psychoda fly without having to take the plant out of operation.

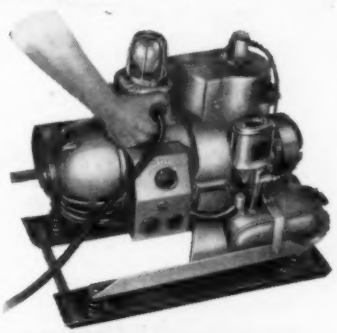
According to the NATIONAL DISINFECTANT CO., 2417 COMMERCE ST., DALLAS, TEX., the proper application of Psycon will eliminate the fly larvae without any harm to the purifying bacteria on the filter rocks.

The same company will supply its ND-25 chemical compound that may be just what is needed to open a clogged sewer. If odors cause a problem to the sewer system, the company's Solvex may be the answer.

For detailed information on Psycon, ND-25, and Solvex, write directly to the manufacturer, or you may use the Post Card on the insert following Page 52. Circle No. 742.

CHOOSE
from a full line of
HOMELITE
Carryable
Construction
Equipment

SELF-PRIMING CENTRIFUGAL AND DIAPHRAGM PUMPS
Sizes: 1½" to 3" — capacities to 15,000 g.p.h. for dewatering and water supply.



ELECTRIC GENERATOR SETS FOR TOOLS AND LIGHTS
Complete range of sizes and voltages up to 5,000 watts.

LIGHTWEIGHT POWERFUL ONE-MAN CHAIN SAWS
Complete line of saws with clearing and brushcutter attachments for every woodcutting job.

HOMELITE
A DIVISION OF TEXTRON, INCORPORATED
PORT CHESTER, N. Y.

Parisian Sanitation Squad Goes Outboard Boating

The Paris sewer system, a network of underground tunnels some 13 miles long, carrying 1,200,000 cubic meters of waste per day, has long been a problem to the city's sanitation department. For years, the department has been cleaning these underground passages with a water-borne crew of boatmen. The squad usually consisted of 25 men, 20 of whom walked a sidewalk along the underwater channels, pulling an 11,000-pound barge by hand.

Thanks to an efficient outboard motor made by EVINRUDE MOTORS, 4626 N. 27TH ST., MILWAUKEE, WIS., the job of cleaning the Paris sewer system has been greatly simplified. The French recently equipped their tow boat with a 25-hp Evinrude outboard motor. The squad now rides along in their outboard "run-about," and the 20 men who pulled the barge have been relieved for other tasks.

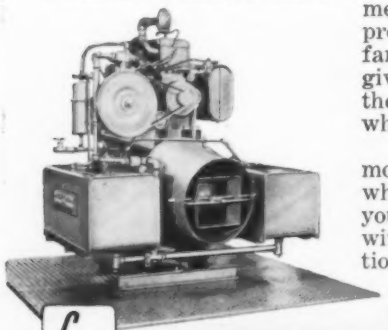
Parisian sewer squad takes to outboard boating along the 13 miles of city sewer system.

For information about outboard motors and their municipal and work applications, write directly to the manufacturer, or use the Post Card on the insert following Page 52. Circle No. 741.

solve your fly and mosquito control problems

with the **John BEAN** Pestaire

11,000 cubic feet of air per minute at 85 mph velocity.
360° rotation on rugged turntable base.
Royalette high pressure pump handles all types of spray materials — including wetable powders.



Now, at reasonable cost, you can have equipment that's designed for spraying parks, playgrounds, school grounds and all types of recreational areas that require large-scale fly and mosquito control.

Mist spraying with the Pestaire provides a residual effect that — compared to fog or smoke — can be measured in days, instead of hours, of protection. The Pestaire's axial flow fan and straight-through discharge give you effective coverage along with the "drive" to put the mist spray where you want it over a wide swath.

Available either for pickup truck mounting or as an independent two-wheel trailer unit, the Pestaire offers you a combination of big capacity, with compactness and ease of operation that no other sprayer can provide.

MAIL COUPON FOR DETAILS TODAY!

fmc FOOD MACHINERY AND CHEMICAL CORPORATION

John BEAN LANSING 4, MICHIGAN SAN JOSE, CALIFORNIA

Division of Food Machinery and Chemical Corporation

Please send me: ( ) Pestaire Specifications ( ) Spray Concentration and Gallonage Data. ( ) Mist Sprayer Comparison Table ( ) Mosquito Control Costs

ATTACH COUPON TO CARD OR LETTERHEAD—GIVE NAME AND ADDRESS

New Tricycle Mounting for Steam Cleaner

The Malsbary Model 250 HPC for cleaning refuse trucks, truck engines ready for repair, and the grease from walls and other parts of sewage-treatment plants, is now available on a new tricycle mounting, according to the MALSBARY MFG. CO., 845 92ND AVE., OAKLAND 3, CALIF. This special mounting may be purchased separately for all high pressure combination cleaners now in use. It increases the cleaner's portability around the plant or shop as well as in the field.

The frame of the new tricycle mounting is constructed of 1-inch pipe-size tubular steel, and has a cold rolled steel

axle 1-inch in diameter. It measures 78½ inches long, 39 inches wide, and 16 inches high, and weighs 145 pounds.

For further details on the new tricycle mounting for high pressure combination cleaners, write directly to the manufacturer, or you may use the Post Card on the insert following Page 52. Circle No. 761.

Bituminous Curbs Paved Automatically

You don't need curbing forms when you use the new Etnyre automatic curb paver. The heavy-duty machine will lay 90% compacted bituminous curbing in one pass. It operates at speeds ranging from four to six feet of curb per minute, depending on the compaction desired, size of mold, and consistency of the material.

According to J. W. McCoy, vice-president of E. D. Etnyre & Co., the self-propelled paver utilizes exhaust from its

own engine to preheat and blast-clean the surface on which the curbing is laid. In many cases, this eliminates the need for a tack coat. The curb-paver lays straight curbing or short-radius curves quickly and easily. An exchangeable mold, sufficiently offset from the rest of the machine, permits curbing to be laid at the exact edge of the pavement or within one inch of any obstruction.

The Etnyre curb-paver is 5 feet-2 inches long, 23 inches wide, and weighs 750 pounds. The steering handle adds three feet of length. While in operation, the machine is propelled by action between the screw and the curb that is being laid.

More detailed information on the automatic curb-paver may be obtained from E. D. ETNYRE & CO., OREGON, ILL. Write directly, or you may use the Post Card on the insert following Page 52. Circle No. 744.

Swing Over or Under Obstructions with Hydrocrane's Working Boom Hoist

Bucyrus-Erie Hydrocrane's working boom hoist helps you speed municipal lifting and digging jobs. No need to leave the boom at any particular position, because it can be raised or lowered as part of your regular operating cycle . . . during swing or while the boom is telescoping . . . just by flicking a lever. Hydraulically raise or lower the boom to change radius of load or bucket as you swing.

Another advantage is gained when working in confined areas. With the Hydrocrane set up to clear obstructions and with the boom retracted, the operator can reach out to get a load, hoist it and retract boom at the same time if necessary, and then swing to hauling unit or dump site, raising or lowering the boom to clear any obstacles. All this is done in one smooth, uninterrupted working cycle. In addition, Hydrocrane's extremely short rear end radius permits swinging inside spread outriggers, allows traffic to pass on narrow streets.

Hydrocrane's versatility lets you work the year 'round handling hundreds of digging, lifting, or clean-up jobs. Available in the ⅜-yd. H-3 or ½-yd. H-5 models. See one in action soon. Get in touch with your Bucyrus-Erie distributor. 117H56

NEW EARTH AUGER ADDS TO VERSATILITY

For handling vertical, horizontal, and angular boring, H-3 and H-5 Hydrocranes can now be equipped with an auger attachment. Holes ranging from 3-in. to 28-in. diameter can be drilled to a maximum depth of 40 feet. Auger is easily attached . . . is easy to operate. Hydraulic motor supplies power, boom weight applies down pressure. Cutter heads are fitted with long-wearing, sharp carboloy teeth . . . are specially designed for drilling various types of material.

BUCYRUS-ERIE COMPANY South Milwaukee Wisconsin

LOOK at all you can do with a *BLAW-KNOX ROAD-WIDENER*

- Spread Base Course for Road Widening
- Spread Shoulder Material
- Place and finish concrete without forms
- Spread and finish Asphalt
- Spread any kind of Aggregate

BLAW-KNOX
Dual Compression Trench Roller

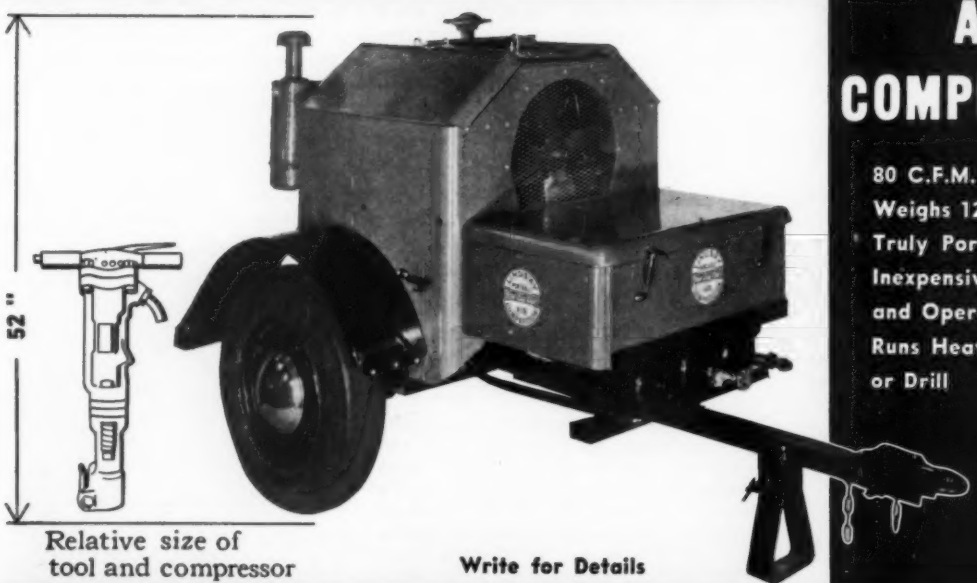
Flexible and economical trench roller can roll a minimum width of 20" when rolls are in line. Can also be hydraulically adjusted to roll a maximum width of 39" to increase production by reducing rolling time.

You'll like the Road Widener's ability to handle many different jobs and materials. It's versatility means that you will need a minimum of labor and equipment on any road widening or shoulder job to lower construction costs. Steady high capacity of up to 200 tons per hour keeps jobs on schedule. Tandem drive wheels on all models have power to spare for pushing the heaviest trucks up steep grades. A large hopper, special conveyor belt and hydraulically controlled strike-off gates handle any type of aggregate or asphaltic concrete in widths of 2 to 10 feet and handle concrete in widths of 2 to 6 feet. Hydraulic controls permit gradual widening of a strip around curves when laying aggregate or asphalt. Special vibrator attachment available for all models will permit the placing and finishing of concrete without the use of forms.

50th Anniversary BLAW-KNOX 1906-1956

BLAW-KNOX COMPANY
CONSTRUCTION EQUIPMENT DIVISION
30 CHARLESTON AVENUE MATTOON, ILLINOIS

LINDSAY MODEL 80 RADIAL TYPE AIR COMPRESSOR



Relative size of tool and compressor

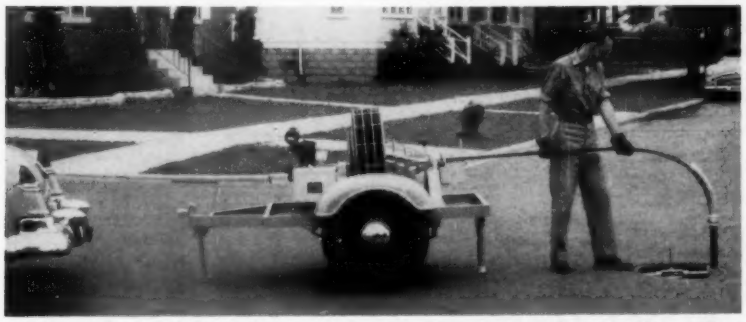
80 C.F.M. Air Delivery
Weighs 1225 lbs.
Truly Portable
Inexpensive to Own and Operate
Runs Heavy Breaker or Drill

Write for Details

P. K. LINDSAY CO.
Deerfield, New Hampshire
97 Tileston Street, Everett, Mass.

Makes Sewer Cleaning Simple

Cities can simplify all sewer cleaning jobs, both large and small, with the O'Brien Sewerking power cable-rodder, according to the manufacturer. The machine projects a revolving heavy steel cable, with cutting tool attached at the front end, into the sewer. The cable goes easily through traps and around corners, and gets at the obstruction to do a thorough cutting job.



This portable machine is ideal for larger, longer sewer and pipe cleaning work.

The Sewerking cable is propelled, revolved, and later retrieved and coiled in the storage drum, all by power. No time is lost when joining or disconnecting sectional rods. Thus, one or two men can handle any sewer cleaning operation quickly, efficiently, and at less cost.

For a detailed description of the O'Brien Sewerking, write the O'Brien Mfg. Co., Dept. AC-656, 5662 Northwest Highway, Chicago 30, Ill., or you may use the Post Card located for your convenience on the insert following Page 52. Circle No. 763.

Manhole Adapters Speed Street Resurfacing

Manholes can be adjusted to the new elevation of a resurfaced street without the expensive and time-consuming job of breaking out and raising the entire manhole casting, according to A. Reed Wilson, president of the A. Reed Wilson Co., 1320 McGee St., Kansas City, Mo.

By using the WB manhole adapter, the manholes are adjusted to new elevations with a minimum of labor and without disturbing the manhole casting or tying up traffic during a lengthy adjustment operation.

In an effort to reduce manhole adjustment costs and the number of street repair obstructions due to these adjustments, Mr. Wilson invited interested parties in the New York metropolitan area to attend a meeting recently, to discuss ways and means of combatting the problem. Mr. Wilson explained that although the WB manhole adapter would not be suitable in 100% of the jobs requiring manhole adjustments, it would work in 80% to 85% of the cases.

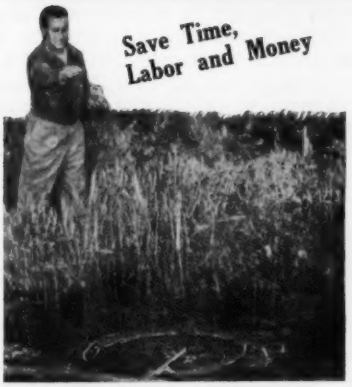
Interested persons attending the meeting included L. P. Agranow, of the Standard Bitulithic Co., Newark, N. J.; W. Vander Schaaf, Public Service Electric & Gas, Newark; Andrew R. Mack, of Frederick R. Harris, consulting engineers, New York and Philadelphia; Sol Kransdorf, engineer of maintenance, Borough of Queens; Irving J. Lake, engineer of maintenance, Borough of Brooklyn; Anthony J. Donargo, chief engineer, Borough of Manhattan; and Warren W. Dykeman, engineer of maintenance, Borough of Manhattan.

For a detailed description of the WB manhole adapter, write the company directly, or you may use the Post Card on the insert following Page 52. Circle No. 746.

More Highway Engineers

J. E. Buchanan, president of The Asphalt Institute, College Park, Md., reports that recent grants have been made by Socony Mobil Oil Co. for highway engineering scholarships at five institutions: Tufts, Penn State, Kansas State, Iowa State, and Miami University. They are the first of a number of scholarships expected to be made available by asphalt-producing members of the Institute to implement the Institute's educational program. The only stipulations laid down by the donor are that the recipients be qualified civil engineering students interested in a career in highway engineering, who need financial aid to complete their studies toward a degree.

KILL MOSQUITO LARVAE
20 TIMES FASTER WITH
TOSSITS
Reg. U.S. Pat. Off.



NO SPECIES IMMUNE!

New Formula Including DDT and BHC Gives 100% Kill In All Breeding Places—SWAMPS • CANALS • CATCH BASINS RAIN POOLS • DITCHES

You simply toss in infested water . . . capsule dissolves and the solution spreads rapidly in all directions forming a film of larvae-killing insecticides over the surface of the water. One Tossit will larvacide 1,000 square feet of water surface.

YOU CANNOT OVERESTIMATE THE EFFECTIVENESS OF TIME-TESTED, CLEAN, SAFE AND EASY-TO-HANDLE TOSSITS . . . ESPECIALLY IN HARD-TO-REACH BREEDING AREAS!

- Tossits make it possible to larvacide areas inaccessible to power spraying equipment . . . and areas hard to reach with hand spraying equipment.
- Tossits permit wider distribution of Field Men with consequent savings of valuable time. One competent man can carry several hundred Tossits, make his own inspections and do the larvaciding work of five men with hand equipment.
- In a matter of minutes, one man with 50 Tossits can larvacide an acre of dense breeding ground . . . or 50 isolated rain pools . . . at an average cost of $1.50.

In Every Instance . . . TOSSITS ARE CHEAPER—MORE EFFECTIVE THAN HAND SPRAYING

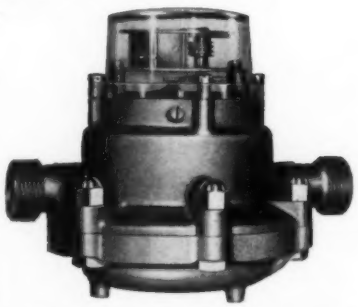
Write Today for Leaflet and Special Price List for Cities, Counties and States

WYCO, INC.
5200 S. Dixie Highway
West Palm Beach, Fla.

Water Meter Features Plastic Register Box

American water meters in ⅝- x ½-inch and ⅝- x ¾-inch sizes are now available with a sealed register compartment covered by a plastic register box with a clear-vision dome. The plastic cover, available as optional construction, prevents clogging of the register, eliminates the possibilities of corrosion, and facilitates meter reading in poor light. Further, it permits straight reading registers to be used on meters placed in pits. Moisture, dirt and water are kept out of the register mechanism at all times.

The new register cover is made of hard Tenite plastic, and effectively resists abrasion and shock. It is fastened to the meter casing by four mounting screws. The seal around the bottom is accomplished by an O-ring gasket seated in a recess in the rim of the bronze meter main casing.



Where frost protection is unnecessary, the frost bottom of this American meter is replaced by a non-breakable bronze bottom. The rest of the meter remains unchanged.

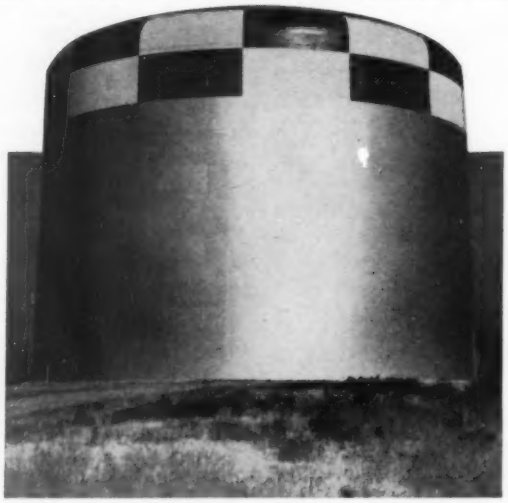
The register compartment may, if desired, be filled with a colorless neutral petroleum oil. An oil-fill hole with gasketed seal screw is provided. This is located in the side of the bronze meter casing just beneath the plastic cover. The oil provides positive protection against fogging and lubricates the register.

Additional details on the new sealed plastic register box may be obtained from BUFFALO METER CO., 2902 MAIN ST., BUFFALO 14, N. Y. Write directly, or you may use the Post Card on the insert following Page 52. Circle No. 769.

Specify "ROSS" Automatic Valves

FOLLOW THE LEAD OF THE ENGINEERS WHO SPECIFIED CONTROLS FOR THIS STANDPIPE FOR THE "SOUTH PITTSBURGH WATER CO." PITTSBURGH, PA.

WATER LEVEL IN THIS, "AMERICA'S LARGEST STANDPIPE," IS CONTROLLED BY A 20-INCH ROSS DOUBLE-ACTING ALTITUDE VALVE.



Pioneers in the manufacture of automatic hydraulic control valves, Ross has served the industry since 1879.

Valves manufactured include:

ALTITUDE—BACK PRESSURE—FLOAT
PRESSURE REDUCING—SURGE RELIEF—COMBINATION
with Hydraulic and Electric Pilot Controls

Ross Valve Manufacturing Co., Inc.
8 OAKWOOD AVE. TROY, N. Y.

Battery Light Saves Hit-Run Victim

When the power source was knocked out by a storm, an Exide battery emergency lighting system powered the light shown above the operating table.

Two-year-old Suzanne Bishop, critically injured by a hit-run driver, owes her

life to a storage battery as well as to surgeons. Just before doctors were to operate on an obstruction that was choking off Suzanne's breathing, a storm knocked out the hospital's electrical supply. The tracheotomy was performed with no inconvenience or difficulty, under lights powered by an Exide emergency lighting battery.

According to Raymond H. Diament, administrator of the Taylor Hospital, Ridley Park, Pa., the 2-hour power interruption was the fourteenth such incident since 1935 when the battery system was installed. Each time the system supplied lights for operating room, delivery room, dispensary, and stairways.

The original battery served for 13 years. In 1948, it was replaced by a 60-cell Exide battery made by THE ELECTRIC STORAGE BATTERY COMPANY, PHILADELPHIA, PA.

Detailed information on Exide batteries may be obtained directly from the manufacturer, or you may use the Post Card on the insert following Page 52. Circle No. 766.

Ice Control Equipment

The Baughman "Ice Control Special," a traveling bus set-up to demonstrate ice-control equipment, will go on the road soon for the benefit of city, state and county highway departments. Its itinerary, as currently scheduled, will include the states of Missouri, Illinois, Indiana, Ohio, W. Virginia, Pennsylvania, Maryland, Delaware, New Jersey, New York, Connecticut, Massachusetts, Maine, Virginia, Michigan, Minnesota, Iowa and Kansas—in that chronological order.

The "Ice Control Special" is a regular city bus from which the passenger seats have been removed. The bus interior is filled with working scale models of various types of spreading equipment, including models of truck-mounted spreaders, tailgate units, dump body spreaders, pull-type spreaders and gravity-feed spreaders.

City officials interested in a demonstration of this equipment, are asked to write directly to the BAUGHMAN MFG. CO., 150 SHIPMAN RD., JERSEYVILLE, ILL., or you may use the Post Card on the insert following Page 52. Circle No. 771.

at Umatilla
TALLER & COOPER EQUIPMENT
keeps track of
toll traffic

At Umatilla, Oregon, where the highway meets the horizon, Taller & Cooper Booths and Toll Collection Equipment meet every toll collection need.

As on all major toll facilities from coast to coast, Taller & Cooper equipment was chosen because it offers a completely integrated toll collection system. Booths were designed for efficient, comfortable performance of personnel; and scientific collection equipment insures accuracy and revenue protection.

Be sure of the best in toll collection systems by counting on Taller & Cooper's 25 years of experience to help you in your planning.

WRITE TODAY for design and construction details

25 YEARS OF LEADERSHIP IN TOLL EQUIPMENT

TALLER & COOPER, INC.
ENGINEERS • MANUFACTURERS

TOLL BOOTHS
TOLL COLLECTION SYSTEMS

75 FRONT STREET • BROOKLYN 1, N. Y.

TALLER & COOPER TOLL COLLECTION EQUIPMENT IS USED ON EVERY MAJOR TOLL FACILITY IN THE U. S.

Electric Power Sweeper Has 3-Speed Transmission

A new type of electric power sweeper with a 3-speed transmission forward, plus one in reverse, is offered by the WAYNE MFG. CO., 1219 LEXINGTON AVENUE, POMONA, CALIF. Designated the Model 605-E, it operates with two motors; one for travel, and one to power the brushes and vacuum. This prevents drain on the batteries when the sweeper is traveling to or from a job, and makes it possible for the unit to operate a normal 8-hour day without recharging.

The new Model 605-E is especially suited for sweeping public parking lots, driveways, and crowded city streets. It may be used to sweep the aisles in municipal plants and for cleaning air and railway terminals.

A Wayne 605-E will sweep up to 70,000 square feet per hour in open areas.

The 3-speed transmission provides gear ratios for maximum efficiency under every sweeping condition, even up steep grades. The unit will sweep a path 36, 48 or 60 inches wide quickly and easily.

Additional details on the new power sweeper may be obtained directly from the manufacturer, or you may use the Post Card on the insert following Page 52. Circle No. 747.

CONTRACT SEWER CLEANING PAYS!!
---and here's the proof—

"We were truly amazed at the articles removed from our sewer lines by your equipment. This was over a year ago and we have not been troubled since."—Walter C. Bengson, Supt., Round Lake, Ill., Sanitary District.

"I have never seen anything that does a job as thorough and as economical as your equipment did for our village."—Steve Blatniak, Water Supt., Village of Summit, Ill.

"Your Power Rodding method is so superior to anything that we have ever tried that it is almost unbelievable." — John Devine, Supt. of Streets, City of Sterling, Ill.

". . . our greatest appreciation and approval to NPRC for your very commendable work and full cooperation on all jobs where you have been of service to us."—Nick Di Paolo, Di Paolo Construction Co., Chicago, Ill.

". . . the price was far below any quotation that I had received from anyone."—Herb Mann, Supt. St. Joseph Cemetery, Chicago, Ill.

PLANNED MAINTENANCE PREVENTS EMERGENCIES

You can minimize emergencies by contracting with us to keep your sewers at full flow capacity at reasonable cost. Many sewer lines thought to be undersize have been fully restored after removal of debris by experienced NPRC technicians. Before you decide to replace sewer lines, investigate our "RESTORATION PROGRAM." It may save you many dollars!

For full details or free cost estimate, write today.

NATIONAL POWER RODDING CORPORATION

1000 South Western Ave., Chicago 12, Ill.

7827 Melrose Ave., Los Angeles 46, Calif.

Maryland's Governor Wins Layne Award

Theodore R. McKeldin, Governor of Maryland, received the national Layne Award for 1956 recently, for his protective water resources measures. The award, a framed scroll and a gold-plated replica of a Layne pump on a polished mahogany base, was awarded by Layne & Bowler, Inc., of Memphis, Tenn. It was presented to Governor McKeldin by J. I. Seay, president of the corporation and chairman of its Board of Directors.

In presenting the Award, Mr. Seay cited the state chief executive as an "outstanding advocate of conservation and water resources promotion." Last year, the first Layne Award went to Governor G. Mennen Williams of Michigan.

On an urban issue
for millions of Americans

THE STATES AND THE METROPOLITAN PROBLEM

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John C. Bollens, Director of the Study

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Twin 40-hp gear boxes and twin flywheels on the new mower permit smooth, trouble-free operation. The free-swinging blades or knives are made of high carbon chrome manganese steel. When obstructions are hit, they contract under the flywheels. When cleared, the blades go back to work automatically.

For additional data, specifications and prices, write the BMB Co., Inc., 319-21 New York Ave., Holton, Kans., or

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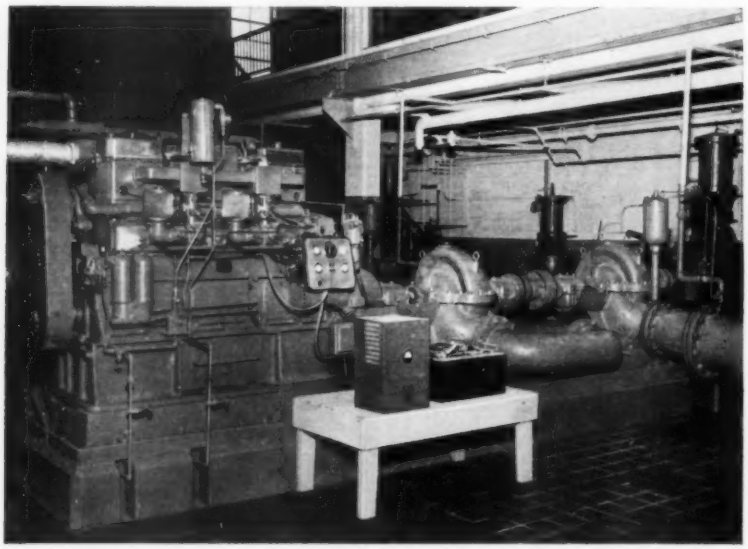

CLIMAX POWER IN NORTH CAROLINA

Goldsboro, North Carolina, insures the certainty of its water supply with this Climax powered auxiliary pumping unit.

A Climax model R61 engine is direct connected to two Morris centrifugal pumps in series having a capacity of 2100 GPM against a 210 ft. TDH when operating at 1200 RPM.

Plant designed by and constructed under the supervision of William C. Olsen and Associates, Consulting Engineers, Raleigh, N. C.

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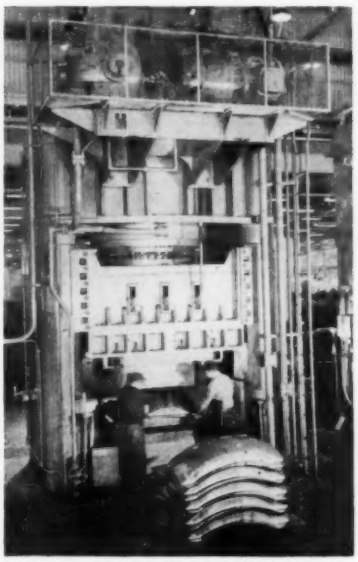
Caterpillar Dedicates New Tractor Plant

The world's largest motor grader and wheel-type tractor plant was dedicated at Decatur, Ill. recently, by the Caterpillar Tractor Co.

Built to accommodate the company's growing production of wheel-type trac-



Heavy gauge steel is formed for wheel-tractor fenders in this 3,000-ton hydraulic press.

tors and motor graders, and to release facilities at the main plant, Peoria, Ill., for added output of crawler tractors and diesel engines, the new plant is situated on a 425-acre plot of land less than a mile northeast of Decatur. The two main buildings provide more than 840,000 square feet of manufacturing and office space.

In addition to the main buildings, the plant site includes a bituminous-surfaced parking area for 1,150 cars, and 12 other buildings such as the heating plant, fixture-storage building, switch house, in-

dustrial waste disposal and lumber storage buildings.

Employing more than 3,000 persons, the new plant is devoted to the manufacture of the No. 12, No. 112, and No. 212 motor graders, and the DW15, DW20, and DW21 wheel-type tractors.

Portable Roller Features Power Steering

Latest addition to the Littleford Bros. line of portable rollers is a new 3-5 ton portable unit complete with power steering. The heavy-duty roller is designed to simplify your most difficult street

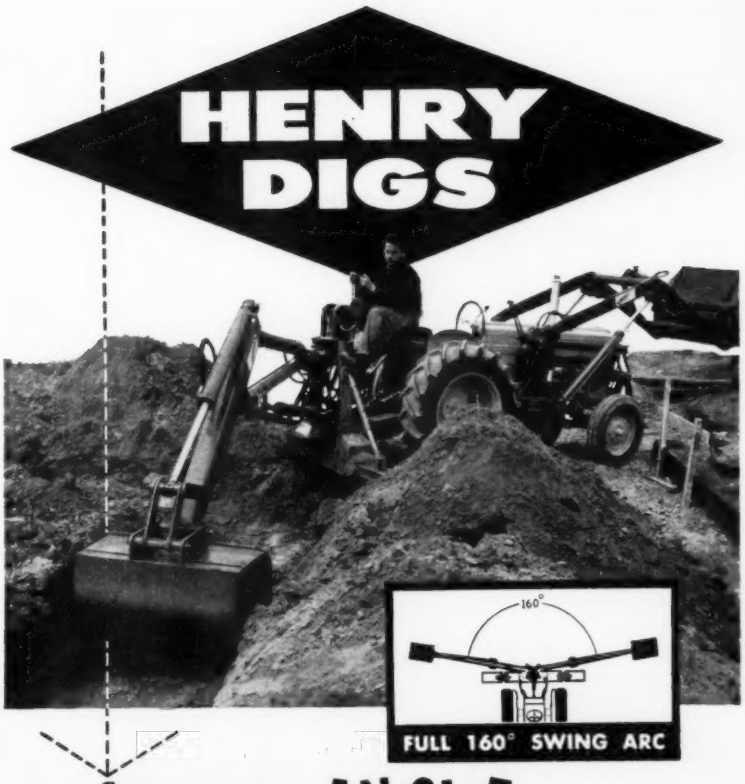
compaction jobs. The steering is done by a steering wheel, not a steering lever, reducing the time needed to train an operator.

The new Littleford Model 160 also features a special hydraulic lift. Thus, the operator can change from trailing-to-rolling-to-trailing positions hydraulically, with the flip of a switch. The unit is powered by a 19.5 air-cooled engine, and has two forward and two reverse speeds. The clutch is located outside the roller for easy adjustment.

Also included in the Littleford line of portable rollers are 2-3 ton and 4-6 ton models. For free descriptive bulletins, write directly to LITTLEFORD BROS., INC., BOX 500-P, E. PEARL ST., CINCINNATI 2, OHIO, or you may use the Post Card on the insert following Page 52. Circle No. 752.

Jack Ammann Offices

In addition to the firm's headquarters at Broadway at 10th, San Antonio 5, Tex., Jack Ammann Photogrammetric Engineers, Inc., maintains offices in Atlanta, New York, Houston, Chicago, Seattle, Denver, and Kingsburg, Calif. Additional Ammann offices are located in Perth, Australia, and Tripoli, Libya.



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The Henry will dig straight-sided ditches, bell holes, culverts from any angle within its 160 degree swing arc. Even on rough, sloping terrain, the backhoe and tractor level up in seconds for sure-footed digging.

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Team this backhoe with the Henry Industrial Tractor Shovel and you have a one-manufacturer combination that is unmatched in the earthmoving field. Get the facts on Henry—see your nearest Henry dealer, or write to us today.

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Want to find out how to help in *your* community?
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Low-Cost Utility Tractors

Two new economy models of the Fordson Major Diesel tractor are announced by E. H. Woods, general sales manager of the TRACTOR AND IMPLEMENT DIVISION, FORD MOTOR CO., BIRMINGHAM, MICH. The tractors are designed for use with loaders, trenchers, diggers and other equipment where hydraulic lift and implement linkages are not required. They supplement the FMD line of standard 4-wheel diesel tractors.

With the exception of the hydraulic system and linkages, the new utility models have all of the features of the standard FMD 4-wheel tractors, including six forward and two reverse speeds, sealed beam headlights and tail light, an adjustable swinging drawbar, a 12-volt

New Fordson Major Diesel utility tractor equipped with a Ford industrial loader.

electric system and starter motor, and a transmission type power take-off. All Fordson Major Diesel tractors are now being equipped with a new "proofmeter," an all-in-one instrument that indicates engine revolutions per minute, total hours of engine operation, and ground, power take-off and belt pulley speeds.

A more detailed description of the new utility tractors may be obtained directly from the manufacturer, or you may use the Post Card on the insert following Page 52. Circle No. 758.

New Florida Plant for Concrete Pipe

A new concrete pipe manufacturing plant in Ft. Lauderdale, Fla., was recently completed by the United States Concrete Pipe Co. and the Universal Sewer Pipe Corp., both of Cleveland, Ohio. The plant occupies 20 acres, and has over 12,000 square feet of manufacturing space. It will produce all concrete pipe types and sizes, including vitrified clay-lined concrete pipe, and Tylox flexible couplings for concrete pipe jointing. W. R. McGarry will direct operations at the Ft. Lauderdale plant.

KENNEDY A.W.W.A. Gate Valves Give You More Value For Your Valve Dollar...

O-Ring Seals

Provide excellent seal, prevent binding of stem and result in very easy valve operation. KENNEDY O-Rings are located above collar, permit repacking under pressure. Optional on KENNEDY non-rising stem A.W.W.A. valves.

Stronger Construction

Rugged design and construction features iron that is 50% stronger than ordinary cast iron to keep KENNEDY Valves doing a better job over a longer, more dependable operating life.

KENNEDY Fig. 56 A. W. W. A. Standard Iron-Body Double-Disc Gate Valve, with Bell Ends.

KENNEDY manufactures a complete line of water works valves. Sizes range from 2" to 48" including non-rising stem and outside-screw-and-yoke valves. These valves feature the hook-and-wedge type disc mechanism for easier, better and more positive valve operation. A wide variety of pipe connections are available.

For maximum service life, for the greatest value for your valve dollar, specify KENNEDY valves and fire hydrants. Remember, KENNEDY means dependability in valves, fire hydrants and accessories.

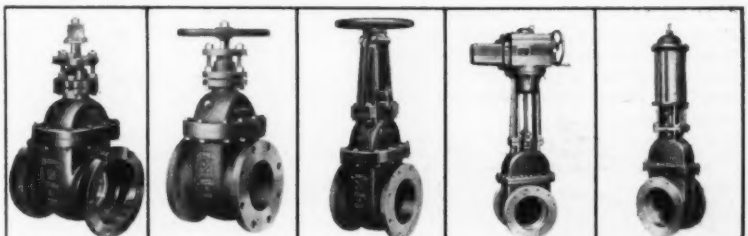


Fig. 571 | Fig. 561 | Fig. 566 | Fig. 566G | Fig. 566FTR

Write today for NEW A.W.W.A. Valve Bulletin

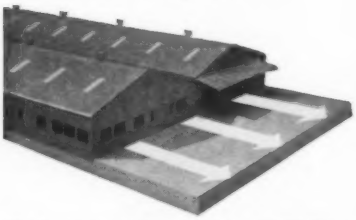
THE KENNEDY VALVE MFG. CO. • ELMIRA, N. Y.

VALVES • PIPE FITTINGS • FIRE HYDRANTS

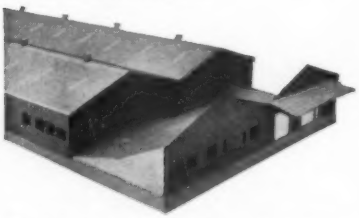
OFFICE AND WAREHOUSES IN NEW YORK, CHICAGO, SAN FRANCISCO, ATLANTA. SALES REPRESENTATIVES IN PRINCIPAL CITIES.

Don't stunt your business growth

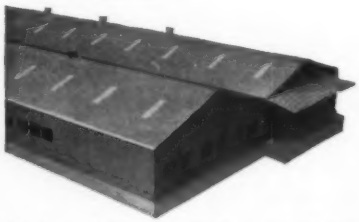
Build with Butler —the building that is easy to expand



Business expansion can be expensive—if it's not planned for. But when you choose a Butler building, you get "built-in" provision for expansion . . . fast . . . in any direction . . . usually at lower cost than initial construction.



Butler all-bolted construction cures growing pains. You unbolt the end or sidewall, move it out, intact, as far as you need, add the necessary structurals and tight-fitting cover panels, and bolt the wall back on.



Neat . . . fast . . . no strain . . . no waste. A minimum of new materials required. Need more space later? Do it again. There's no limit. It's just one of the reasons why Butler is your best building buy. Your Butler Builder can give you many others.

Consult the yellow pages of your telephone directory for name of your Butler Builder, or write on your company letterhead for informative brochure.

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Purchasing News

A Quick Way to Measure Traffic-Accident Data

Measuring distance is as easy as walking with the accurate Rolatape Traffic Model.

Only minutes are needed to measure and check any traffic accident when police officers are using a Rolatape Traffic Model. This highly accurate measuring wheel will measure the position of vehicles, skid marks, braking distance, and the general dimensions of streets and intersections. One police officer operating the wheel measures and records feet and inches at walking speed.

The Rolatape measures horizontal, vertical, overhead and curved surfaces—line-to-line and wall-to-wall. It is designed with an attractive white finish, and folds compactly for storing in a traffic investigation kit or in a glove compartment. The handle of the Rolatape Traffic Model extends to 34 inches.

A more detailed description of this safe, accurate measuring wheel, is available from ROLATAPE, INC., P. O. BOX 1190, SANTA MONICA, CALIF. Write directly to the manufacturer, or you may use the Post Card located for your convenience on the insert following Page 52. Circle No. 757.

Fischer & Porter to Build New Office Building

Ground-breaking ceremonies were held recently for Fischer & Porter's new million-dollar office building.

Plans for the construction of a new million-dollar office building, are announced by Kermit Fischer, president of Fischer & Porter Co., 756 Fischer Road, Hatboro, Pa. The new 2-story building will have over 91,000 square feet of space and will be completely air conditioned. It is the latest of several expansion moves recently undertaken by the company, including a new fluids engineering laboratory, an addition to the main plant, and a new building for the Alloy Steel Casting Co., an F & P subsidiary.

Fischer & Porter also announces the recent formation of an Instrument Division, completing the company's divisional decentralization program. The firm is now divided into five product divisions—Flowmeter, Instrument, Chlorinator & Municipal, Glass and Data Reduction & Automation.

Purchasing

A further report from Fischer & Porter concerns the appointment of two new Latin American representatives. S.A.V.E.R. Guinand will handle F & P industrial instrumentation and chlorination equipment in Venezuela, and Tecnica Colombiana S. A. will handle the company's chlorination equipment in Colombia.

Flashing Barricade

This new barricade for traffic control around hazardous locations is portable, folding, and designed for use with flasher

Steel barricade with flasher safety lights.

safety lights. The neon flashes are said to be visible for a mile. The 8-cell batteries require replacement only once every 60 to 90 days.

Flasher safety lights and barricades can be purchased or rented from the R. D. Fageol Co., Kent, Ohio. For detailed information, write the company directly, or you may use the Post Card on the insert following Page 52. Circle No. 767.

Report Increase in "Payloader" Sales

Shipments of "Payloader" tractor-shovels for the first six months of this fiscal year ending April 30, were 50% greater than the corresponding period of last year, according to Frank G. Hough, president of The Frank G. Hough Co., an International - Harvester subsidiary. Deliveries and production during 1955 were said to have been the largest in the history of the company.

The Frank G. Hough Co., located in 710 Sunnyside Ave., Libertyville, Ill., is the world's largest manufacturer of pneumatic-tired tractor-shovels. The firm is currently engaged in an expansion program which will add 20% to its present plant facilities.

take a SECOND LOOK

AT YOUR RECORD KEEPING

. . . and the second look will give you a shock (if you are using conventional filing equipment for large-volume records)! The second look will unmask unorganized and purposeless activity when it comes to keeping records . . . records on credit, equipment, sales, service, cost, cross-index, etc.

Now . . . look at the operating advantages offered by motorized Diebold Super Elevator Files. With these files, you can "marshal" records for orderly productive work. Operators can remain seated. Records are brought to them instantly at the touch of a button.

Diebold Elevator Files save up to 50% in time and space costs for their users . . . savings that show initial investment write-offs in 5 to 18 months! For example . . . $14,000.00 annual savings write-off initial investment in 17 weeks! Take that second look . . . today . . . and call your local Diebold representative or mail this coupon.

. . . and you'll see how to save money with

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Whether the clean-up job is outdoors in parks and playgrounds or indoors in public buildings, WITT Cans and Pails are the ideal solution to maintenance, cleanliness and sanitation problems.
And, WITT Cans outlast ordinary containers 3-5 times because they have . . .

- STRAIGHT SIDES resist rough handling
- DEEP, ROLLING CORRUGATIONS provide extra rigidity
- STRUCTURAL STEEL BANDS top and bottom cushion wear
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- HEAVY-GAUGE STEEL gives battleship ruggedness

Write today for catalog and name of your nearest WITT distributor.

WITT Cans

"Originators of the Corrugated Can"

THE WITT CORNICE COMPANY
2139 Winchell Ave., Cincinnati 14, Ohio

Pour faster with a Jaeger

Look how this mixer puts out stiff concrete as fast as you can take it. You charge in only 5 to 7 seconds with Jaeger's "Skip Shaker" loader. You mix and remix more thoroughly with Jaeger's criss-cross action, then discharge in another 5 to 7 seconds with Jaeger's big bucket and flight blades and special "catch all" spoon.

With that speed you can really turn out yardage with a mixer that's as rugged as it is fast. Your Jaeger has a bigger engine, automotive transmission, Timken bearing drum rollers and heavy duty drum with machined steel tracks — all to give you years of service with low upkeep and without costly breakdowns on your jobs.

Available in 3½, 6, 11, and 16S sizes. Ask for Catalog M-10.

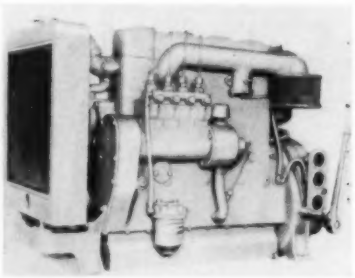
THE JAEGER MACHINE COMPANY 505 Dublin Avenue Columbus 16, Ohio

PUMPS • COMPRESSORS • HOISTS • TRUCK MIXERS • PAVING MACHINES

Purchasing

Small Diesel Engine

Reported to occupy less space than gasoline engines of smaller ratings, this small diesel engine, Model 19, may be used as replacement power where service conditions are too rugged for gasoline engines. The 4-cylinder diesel, of 153.6 cubic inch displacement, is rated at 42



gross bhp at 2,000 rpm. It features a 22 to 1 compression ratio and the Sheppard Simplified Fuel Injection System. This is said to be the only fuel injection system that can be serviced in the field, without special tools or equipment.

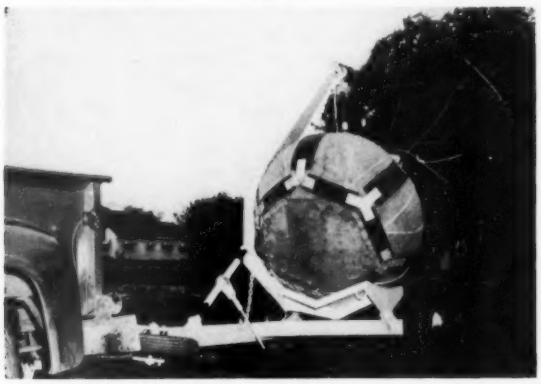
A complete description of the new diesel, along with illustrations and specifications, is available from the R. H. SHEPPARD CO., INC., HANOVER, PA. Write directly, or you may use the Post Card on the insert following Page 52. Circle No. 756.

New Laboratories Planned for Concrete Research

G. Donald Kennedy, president of the Portland Cement Association, 33 W. Grand Ave., Chicago 10, Ill., announces plans for the construction of two new laboratory buildings at the Association's Research and Development Laboratories in Skokie, Ill. The new buildings and equipment are expected to cost about $1.8 million, and will provide for the Association's expanded research program on concrete structures and the fire resistance of concrete. Completion of the new laboratories is scheduled for 1957.

Another announcement from Portland Cement informs us of recent organization changes in the general headquarters staff of the Association's promotion division. The former position of director of promotion has been divided into two new positions; director of promotion planning and engineering services, and director of educational services. Leo H. Corning will handle the former post, and Charles W. Reene is the Association's new director of educational services.

The Modern Way to Move Trees



Moving trees as large as seven inches in diameter is a fast, economical operation when you're using a Model 56 Ryan tree mover. This efficient unit is easily towed by any vehicle, or may be maneuvered independently into areas not accessible to heavy, truck-mounted equipment. Handling is simple with a heavy-duty pivoted front wheel and steering handle.

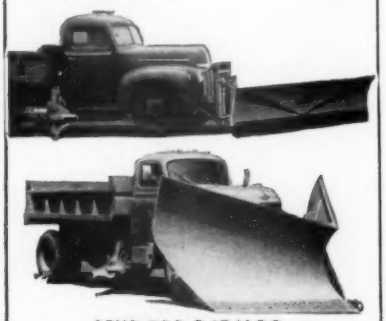
All you do to operate the Ryan tree mover is back it close to the hole of the balled tree—attach the powerful ratchet lifting hoist to the sling—and lift the tree onto the cradle. A special open-side boom permits the tree to swing in any direction for loading onto the cradle or maneuvering out of densely growing areas. A dependable "Push Pull" jack tilts the boom directly over the ball for either front or rear loading.

A complete description of the Ryan

Unbeatable Combination!

- **Root Underbody Scraper**
- **Root Sno-Plow**

The underbody scraper is efficient, economical, year-round equipment for street, alley, parking lot maintenance, snow and ice removal, etc. Root Sno-Plows for faster, better snow removal. 25 models of one-way tripping and V-type Sno-Plows



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GET TO THE ROOT OF THE PROBLEM

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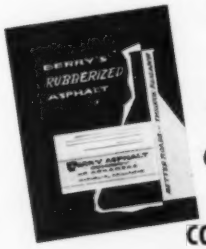
BERRY'S *RUBBERIZED* **ASPHALT**



THIS FOLDER CAN *SAVE YOU THOUSANDS OF DOLLARS* IN ROAD CONSTRUCTION AND MAINTENANCE

YOU WILL SEE HOW rubber and asphalt have been successfully blended to form an all weather sealcoat — how the adhesiveness and resiliency of rubber have been retained in the exclusive Berry blending process — why Berry's rubberized asphalt is less susceptible to temperature, holds more aggregate, saves on bitumen and requires far less maintenance.

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Specify IOWA because...

you can always count on Iowa for a lasting source of replacement parts . . . and products that service easily.

Look for These Features:

Double disc, parallel seat . . . positive wedging action for efficient, no-leak closing . . . gates hung loosely from stem nut—no binding . . . rugged, time-proved design means long life, low service costs . . . available with bell, flange, or mechanical joint connections to fit any existing or planned installation . . meet all A.W.W.A. specifications.

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IOWA VALVE COMPANY

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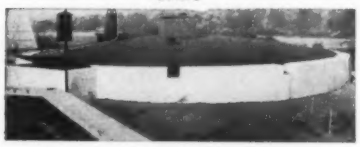
Versatile

"GUNITE"

FOR
REPAIRS TO
SEWAGE DISPOSAL
PLANT

Before



After

The existing concrete on this sewage disposal plant in western New York had deteriorated to an alarming extent and necessitated the rebuilding of practically the entire plant above ground. The pictures above are evidence that "Gunite" repair is not only practical but that it resulted in complete restoration of the plant.

On job after job, "Gunite" proves its worth. Our engineers will inspect your facilities and make recommendations for repairs without obligation on your part.

Engineers: For detailed information on "Gunite" the versatile repair material for all types of concrete structures, send for our 48 page bulletin. Pease use the coupon. Mail to

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Purchasing News

tree mover and tree slings may be obtained from the RYAN LANDSCAPING EQUIPMENT CO., 871 EDGERTON ST., ST. PAUL 1, MINN. Write directly, or you may use the Post Card on the insert following Page 52. Circle No. 750.

Cables for Street Lighting

Municipalities and highway planning commissions are becoming increasingly aware that good street lighting reduces traffic accidents, improves business, cuts crime, and builds good community relations. Because this is so, a 16-page booklet devoted to the selection of street-lighting cables has been prepared by the WIRE AND CABLE DEPARTMENT, GENERAL ELECTRIC CO., BRIDGEPORT 2, CONN. It deals with special designs of cable particularly suited to street lighting.

Approximately 90% of all existing street lighting circuits are of the series type. On the other hand, 90% of new installations are multiple circuits. Many communities are switching from series to multiple, neighborhood by neighborhood. The decision to use multiple or series circuits will have been reached before the cables can be selected. In selecting cables for street lighting, current-carrying capacity, line losses and voltage drop must be considered.

The new booklet contains a wide variety of facts about selecting and handling G.E. street-lighting cables. For your copy, write the company directly, or you may use the Post Card on the insert following Page 52. Circle No. 774.

Reflectorize Your Own Traffic Signs

Warning, regulatory and guide signs reflectorized with Prismo '200' sign finish are doubly effective in daylight, and have "long-range punch" at night. They have complete wide-angle reflection and are free from metallic glare. The finish contains a "Moisture-Pruf" ingredient that repels water, providing intense reflectivity in any weather.

Prismo '200' is easily applied by brush, roller, silk screen, coater or any type of spray directly on the sign blank. Any

BETTER HOSE CARE - WITH CIRCUL-AIR

Patented Circul-Air Dryer

Electrically operated. Air conditions as it dries. Lengthens hose life. Saves space. No other drying method is so fast—so economical—so easy to use.

ROTO-JET Washer — Thoroughly washes, rinses and dries hose automatically. One man operation. Cleans uniformly, with or without detergents.

PORTO-RAK — Saves space. Holds 1800 ft. of 2½" hose in an 8' space. Roll it to the truck for complete hose reload—out of the way when not in use.

Write for Catalog TODAY
THE CIRCUL-AIR CORPORATION
575 East Milwaukee Detroit 2, Michigan

Another NEW Leopold Installation...

New 48 mgd Kansas City, Mo. plant equipped with Leopold Filter Bottoms

For top performance, use Leopold Bottoms. They work better . . . last longer. Write today for complete details.

F. B. LEOPOLD CO., INC.
2413 W. Carson Street, Pittsburgh 4, Pa.

shape, size or surface that can be painted can be reflectorized with the new finish. Further, there is no waste. All the material goes on the sign, eliminating loss in trimming.

How your municipal sign shop can reduce its reflectorizing costs more than 50%, is explained in *Bulletin No. P-256*. For your copy, write PRISMO SAFETY CORP., HUNTINGDON, PA., or you may use the Post Card on the insert following Page 52. Circle No. 759.

Pinpoints Water Leaks Quickly and Accurately

It's easy to detect those costly leaks in water pipelines and rapidly determine their exact position when you're working with the Senior leak detector. The easy-to-operate Model L-46 uses standard portable batteries and miniature tubes. It features a special crystal microphone that can be used to make readings through dirt, concrete and pavement, or on valves, risers and shut-offs.

Under favorable conditions, where the pipe is embedded to allow the vibrations to rise to the surface, any leak may be detected and its position located by merely placing the microphone on the pavement above the pipe. Contact may also be made directly with the pipe through a meter service, hydrant, or jack hammer hole.

Each L-46 Senior leak detector will be furnished with operating instructions showing how leak surveys can be made, how the exact locations of leaks can be determined from two or more readings, and how the filter control can be used to narrow frequency response.

Additional data on the Goldak Model L-46, may be obtained from THE GOLDAK CO., INC., 1544 W. GLENOAKS BLVD., GLENDALE 1, CALIF. Write directly, or you may use the Post Card on the insert following Page 52. Circle No. 765.

TARCO "Scotchman"

KEEPS ROADS and STREETS FREE of ICE and SNOW ALL WINTER LONG!

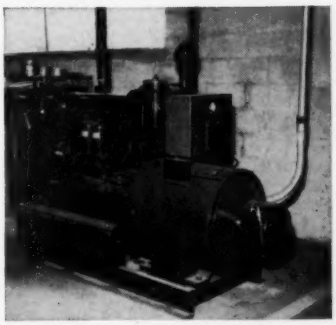
Gives you safe, bare streets all winter long at *lower cost*, in *less time*, with *less labor*. With the stainless steel Scotchman, you can salt-treat streets and highways *8 times faster* . . . up to 20 miles of highway in 48 minutes. Blower *spreads* full *30 ft. wide* in a perfect "Bird Shot" melting pattern . . . uses as little as ½ ounce of salt per square yard.

Your choice of: Cab Control or manual operation. New Cartridge Type Power Unit: engine, electric starter, and impeller is a single compact unit . . . can be removed or installed in less than 5 minutes . . . for simple and quick servicing. Ask your dealer or write for details.

TARRANT MANUFACTURING COMPANY
27 Jumel Pl., Saratoga Springs, N. Y.

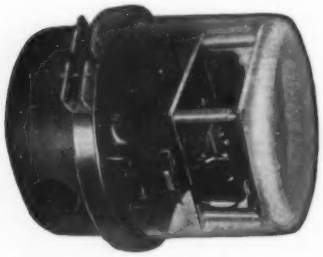
"We've Stopped Worrying About Losses Due to Electric Power Failure"
Reports George R. Churchill Co., Hingham, Mass.

One bad experience was enough for this busy manufacturer of buffing wheels. A week-long power failure caused by a hurricane led to the installation of a Ready-Power Standby Electric Plant big enough to operate all machinery. Full time production is now assured during power emergencies. The wide range of Ready-Power models can meet your requirements, too. Write for information.



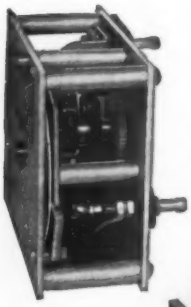
READY-POWER
ELECTRIC PLANTS
The Ready-Power Company, 11231 Freud Ave., Detroit 14, Michigan
Gas and Diesel Engine Driven Generators and Air Conditioning Units; Gas and Diesel Electric Power Units for Industrial Trucks

TIME-O-MATIC FLASHERS JACK MOUNTED

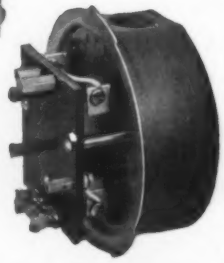


Time-O-Matic Jack Mounted Flasher in Standard Meter Case

Single or two circuits, every model with built-in eliminators. Available with standard meter case (above) or separately with Jack mounting panel (below).



Time-O-Matic Jack Mounted Flasher Only



Time-O-Matic Jack Panel in Meter Case

SPECIFY DEPENDABLE TIME-O-MATIC

↓

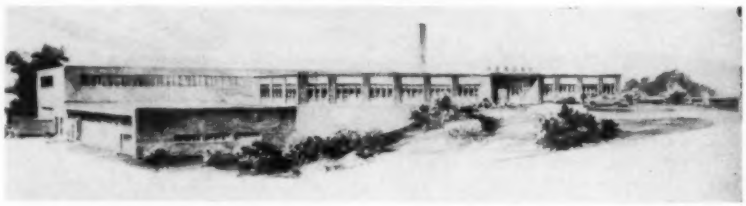
"A Sign of Good Control"

•

TIME-O-MATIC CO.
1108 Bahls Street
Danville, Illinois

Purchasing News

New Hersey Plant



Work was recently started on a new manufacturing plant for the Hersey Mfg. Co., 97-year-old manufacturers of water meters. The plant, located on a 10-acre lot in Dedham, Mass., will replace the firm's present buildings at the corner of E and Second Streets, South Boston, Mass. The company also has a branch plant in Monterey Park, Calif., and maintains sales offices in principal cities throughout the country.

The cost of the new manufacturing plant is expected to exceed $1,250,000, and completion is scheduled for March, 1957. Engineers and builders are the Boston firm of Cabot, Cabot & Forbes and their building affiliate, Aberthaw Construction Co.

New Reflective Liquid Reduces Traffic Accidents

This special kit contains enough reflective liquid to reflectorize 2,200 feet of alternate-color curb marking; 400 square feet of obstruction marking; or 100 12½-foot barricades. A 6- x 8-inch application is identifiable about 1,000 feet away under high beam headlights.

The kit contains "Cedit" reflective liquid for reflectorizing traffic hazards and other objects made of wood, con-

BIRD DAMAGE CAN BE STOPPED

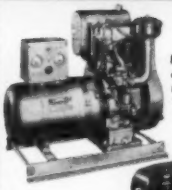
Bur-Co Bird Repellent will pay for itself many times in labor saving and the elimination of building repairs. It does not harm birds—they instinctively dislike Bur-Co. There is no chemical reaction to any building material. It will not harm humans. Each application applied properly, as described below, will eliminate birds for one year or longer.

One ribbon of Bur-Co about ½ inch thick as shown at the top of this illustration is sufficient for a narrow ledge. Slightly larger ledges can be treated with two such ribbons 4 inches apart. The zigzag treatment, also shown above, for wider areas. Write today.

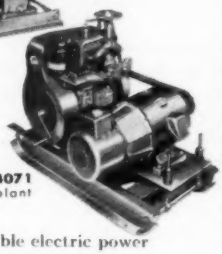
BURR CHEMICAL CO.
3329 AUBURN Dept. JJ ROCKFORD, ILL.

PIONEER
GEN-E-MOTOR

PORTABLE POWER
When and Where You Need It!



MODEL WA 30
direct coupled model; 3800 Watts



MODEL SS 4071
belt driven plant
6500 Watts

- Dependable electric power
- Fast starting engines
- Lightweight, portable plants
- Skid mounted, heavy duty units
- Over 40 models from 500 watts to 12 KW continuous duty units

Write today for FREE catalog

PIONEER GEN-E-MOTOR CORP.
5849 West Dickens Ave., Chicago 39, Ill.
Generators • Electric Generating Plants
Power Lawn Mowers • Electric Portable Power Tools

crete or other rough or porous surfaces, such as underpass abutments and walls, culverts, hydrants, safety islands, curbings, telephone poles, trees, guard rails and posts. During the day it is light gray and blends with concrete or other light-colored objects. At night,

under auto headlights, it reflects back to the driver in bright silver.

The introductory kit, a special offer, is available from the MINNESOTA MINING AND MFG. CO., 900 FAUQUIER ST., ST. PAUL 6, MINN. For complete information, write the company directly, or you may use the Post Card on the insert following Page 52. Circle No. 743.

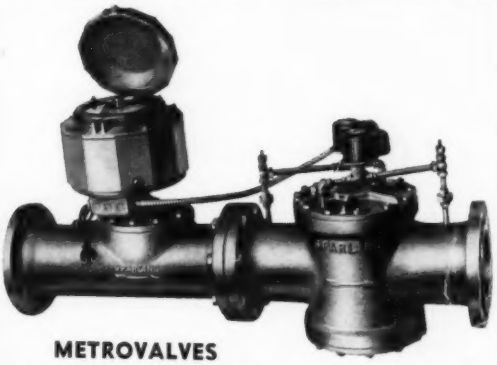
Runway Marker Lights for Municipal Airports

A new high-intensity runway marker light was recently introduced by the CROUSE-HINDS CO., SYRACUSE 1, N. Y. Its bi-directional beams can be aimed

or brightened by remote control to meet any kind of weather conditions along an instrument landing runway. Each fixture stands 19 inches high, and is finished in chrome yellow enamel.

By means of a control panel (Type CPT) located in the control tower of your municipal airport, tower operators can handle a whole system of the new runway marker lights by switching them off or on, raising or lowering their brightness and aiming them in accordance with the control panel's indicator

flow information at your finger tip!



METROVALVES

Automatic Flow Regulation—Total Flow Registration

Select the required flow by simply setting a pointer to the desired dial position. Total flow is easily read on the counter type clock. Ideal for either remote telemeter applications or on the spot control.

Contact any Sparling Office for complete information.

- MAIN-LINE METERS
- FLOW and CHEMICAL FEED CONTROLS
- INSTRUMENTS

SPARLING METER COMPANY
Incorporated
225 NORTH TEMPLE CITY BLVD., EL MONTE, CALIF.

ATLANTA 3	66 Luckie Street NW	945 North Main St.	LOS ANGLES
BOSTON 8	6 Beason Street	650 First Avenue West	ROSELLE, N. J.
CHICAGO 8	1500 South Western Ave.	85 Industrial St.	SAN FRANCISCO 24
CINCINNATI 2	626 Broadway	1932 First Avenue	SEATTLE 1
DALLAS 1	505 No. Ervay St.	207 Queens Quay West	TORONTO, CAN.
KANSAS CITY 6, MO.	6 E. Eleventh St.	248 London Rd.	ROMFORD, ENGLAND

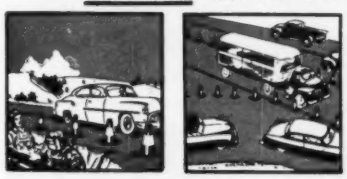
RESPECTED! OBEYED!

SAFE-T-CONE*

All-Rubber TRAFFIC GUIDES

The silent workhorse of efficient traffic control!

*U.S. Pat. Number 2,719,505



NOW IN 3 SIZES!

28 IN.

18 IN.

12 IN.

PAINTED OR REFLECTORIZED

12" size all yellow on black base only. 18" and 28" available in standard tri-color or REFLECTORIZED all-yellow on black base.

SPECIAL ADAPTERS INCREASE USES!

Signs-Flashers-Flag Adapters

NEW! Flasher lights!

Uses standard 6-volt battery. Fits into top of all sizes. Unbreakable plastic lens.

2121

Low cost, long life, light weight make SAFE-T-CONES ideal for every traffic control need. Tough and strong, they're made to last, even with most abusive use.

Write for complete descriptive folder

SAFE-T-CONES are made only by RADIATOR SPECIALTY CO., Charlotte, N. C.

HAUCK EQUIPMENT

Thawing Burners

Double Jacketed Rubber and Asphalt Furnace

Compound Melting Furnace

Lead Melting Furnace

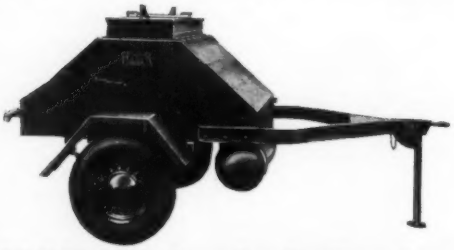
Asphalt Tool and Cement Heater

Asphalt and Tar Melting Kettles

Bottom Fired

Speed Master Tube Fired

Heat Tampers and Smoothers



HAUCK Asphalt Paving TOOL HEATERS

Heat 16 or More Tools in 5 Minutes

Hauck Heaters get your asphalt tools ready as you need them. Burn kerosene; can also be furnished to burn L.P. gas. No sparks, no smoke, no ashes. Only safe, controlled heat. Available with built-in binder cement kettle or with rack for binder pails.

HAUCK MANUFACTURING CO.

111-121 Tenth St. Brooklyn 15, N. Y.

Write for Catalogs

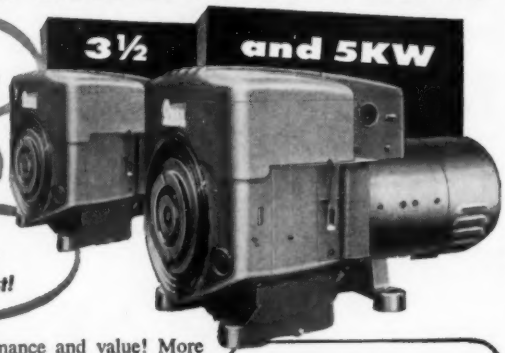
New ONAN CCK Electric Plants

MORE OUTPUT *per pound of weight!*

MORE OUTPUT *per gallon of fuel!*

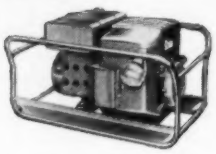
MORE OUTPUT *per dollar cost!*

3½ and 5KW



Way ahead in performance and value! More powerful, two-cylinder, air cooled Onan gasoline engines of 4-cycle, horizontally-opposed design give smooth, quieter, effortless performance. Short stroke and moderate speed cut engine wear, give longer life. Quality features include rotating Stellite-faced exhaust valves, solid Stellite valve seat inserts, full pressure lubrication. Onan's exclusive Vacu-Flo cooling system available for difficult or "buried" installations.

Completely Onan-built, with Onan gasoline engines direct-connected to Onan all-climate generators in compact, rugged units. Available in stationary, portable and standby models with a wide range of accessories.



PORTABLE MODELS
Available with carrying frames or 2-wheel dollies. Easily portable. Other Onan portable models: 500 to 10,000 watts.

Write for folder on all CCK models

Onan ELECTRIC PLANTS

D. W. ONAN & SONS INC.

2558 University Avenue Southeast, Minneapolis 14, Minnesota

Purchasing

scale which is calibrated in degrees of weather visibility. For ideal performance, the marker lights should be spaced 200 feet apart and 10 feet back from the runway's edge. They are then able to withstand static loads from high winds or propeller blasts, but can be sheared at the base by light impact when struck horizontally.

An innovation in the Crouse-Hinds line will be featured in the August issue of THE AMERICAN CITY. For further details, write directly to the manufacturer, or use the Post Card following Page 52. Circle No. 740.

Lamp King

This aerial lift for street light maintenance is offered as an advancement over the Hydro Sky-Worker made by the same company. It is also a hydraulically-operated boom equipped with an insulated crow's nest. It rotates on a truck-mounted turret, with a turning arc of 400° or 40° past full circle.

For a complete description of the Lamp King, write MAXWELL EQUIPMENT CO., INC., FORD ST., MILFORD, CONN., or you may use the Post Card on the insert following Page 52. Circle No. 760.

Pneumatic Rate Controller for Water Filter Plants

Wherever you can fit a piece of pipe in your water filter plant, you can install a Modulair pneumatic filter rate controller. The Modulair is only two to three pipe diameters long, and will

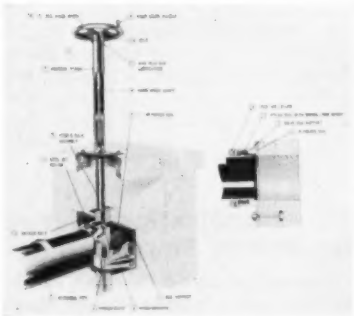
be furnished in standard pipe sizes of four to 24 inches. It is easily installed in any position—horizontal or vertical—and comes equipped with corrosion-resisting fittings.

Said to lengthen filter runs, the pneumatic Modulair combines a low head-loss, annular Venturi measuring element with a streamlined throttling element. This new design offers so little resistance to flow that you get longer filter runs. The low head loss cuts operating head requirements, permits vertical compression in plant design, and lowers costs in plant construction.

Designed for minimum maintenance, the new Modulair provides no place for air to accumulate, and there is no place for sand to lodge and interfere with accuracy. The throttling element, the only moving part inside the pipeline, is made of noncorrosive rubber. There are no line valves, pilot valves, pistons, valve shafts, or stuffing boxes to pack.

How you can get complete accuracy in filter control automatically and inexpensively, is explained in *Bulletin 950*. For your copy, write the SIMPLEX VALVE & METER CO., DEPT. AC-7, 7 EAST ORANGE ST., LANCASTER, PA., or you may use the Post Card located for your convenience on the insert following Page 52. Circle No. 755.

New Skimming Pipe



The Roto-Skim is a slotted pipe that removes scum from the surface of primary waste treatment tanks and recovers byproducts in API tanks. The new swimming device operates on the rack and pinion principle. It is especially adaptable to primary waste treatment tanks where the freeboard is over

Specialists
Sewer and pipe cleaning equipment

STEWART

- SEWER RODS
- SECTIONAL STEEL RODS
- COMPLETE SEWER CLEANING MACHINES
- BRACES AND GUIDES
- BUCKETS, ROOT CUTTERS AND DRAG TOOLS

Save the expenses of experimenting. Consult Stewart for any problem in the SPECIALIZED FIELD of pipe cleaning

SINCE 1901

W. H. STEWART, INC.
P.O. Box 767, Syracuse, New York

LEADITE
The Pioneer Self-Caulking Material for C.I. Pipe

Thousands of miles are—

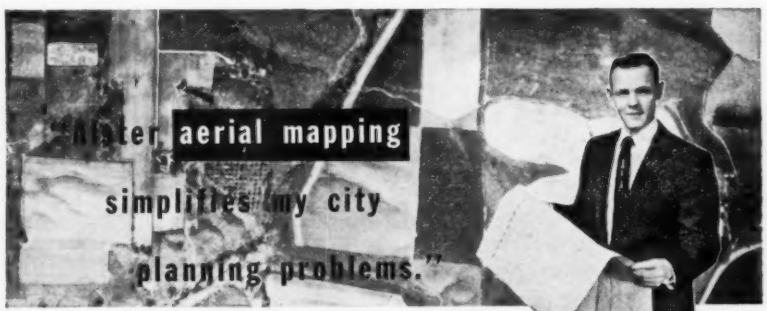
Jointed with LEADITE for Satisfaction and Long Life

because Leadite makes a good, tight joint that improves with age . . . and in addition saves on installation costs.

Write for Literature.

THE LEADITE COMPANY
Girard Trust Co., Bldg., Philadelphia 2, Pa.

No Caulking



—BURL A. PARKS City Planning Engineer, Davenport, Iowa

"Planning the extension of our street system beyond corporate limits would have been impossible without the topographical maps Alster & Associates made for us from aerial photography," writes Davenport's City Planning Engineer. "The maps of fringe areas make it simple to choose best locations for street grades, drainage, and sewer extensions and to examine proposed land subdivisions." *Learn how Alster mapping can simplify your survey problems.*

Free booklet tells how Alster methods cut survey costs up to 75%, get construction started weeks earlier!

Dept. A-1
6135 Kansas Ave., N.E., Washington 11, D.C.
29 E. Madison St., Chicago 2, Illinois

ALSTER & ASSOCIATES, INC.
AERIAL SURVEYS

AMERICA'S
HEADQUARTERS
FOR
**FIRE EQUIPMENT
AND
POLICE EQUIPMENT**

WRITE FOR
NEW CATALOGS

W. S. DARLEY & CO.
ESTABLISHED 1908
CHICAGO 12, ILLINOIS

Purchasing News

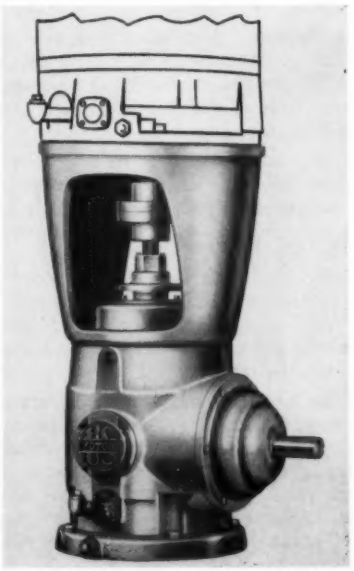
three feet, and where the cost of other skimmers is prohibitive.

A handwheel activates the pinions which in turn control the rotation of the REX Roto-Skim pipe. The REX rack and pinion Roto-Skim can be accurately adjusted to the liquid level to make efficient skimming fast and easy.

For further information on the new skimming pipe, write the CHAIN BELT CO., DEPT. PR, MILWAUKEE 1, WIS., or you may use the Post Card off the insert following Page 52. Circle No. 775.

New Combination Drive for Water, Sewer Plants

Wherever continuous or standby pumping service is needed—at city water supply stations, sewage disposal plants, and fire-fighting stations—this new right-angle combination drive, the U. S. Holloshaft Type GPC, will be useful. When electrical power fails, or when the electric motor breaks down, the drive engages quickly and easily to transmit power from a standby combustion engine with very little lost time.



The new drive is fully described in two new bulletins (No. 1775 and No. F-1912), available from U. S. ELECTRICAL MOTORS, INC., BOX 2058, TERMINAL ANNEX, LOS ANGELES 54, CALIF. Write di-

TAX EQUALIZATION APPRAISALS

THE J. M. CLEMINSHAW CO.

Appraisers

Nationally Recognized for
Municipal and County Revaluation
Since 1923

An Authoritative Professional Service
Universally Accepted by Assessing Officers
and the Taxpaying Public

Write for Brochure and Client List

Main Office:
1601 Brookpark Road
Cleveland 9, Ohio

District Offices:

Hohokus, N. J.	50 Edgewood Dr.	Tel. Gilbert 4-4883
Plainville, Conn.	11 Williams St.	Sherwood 7-0676
Milwaukee, Wisc.	2014 Sunset Court	Tel. Spring 4-6680

The Bernard
Pressure
Pilot Control
for water supply systems

Designed to operate pump motor controllers on single or multiple pump systems, according to the pressure demands, and to assure correct start and stop operation of pump motors without interference of water system surges. The Pilot Control also operates selective sequence control of pump motors according to the anticipated demand.

Write for further information

ERNEST BERNARD ELECTRIC CO.
10335 S. Morgan St.
Chicago 43, Illinois

rectly, or you may use the Post Card on the insert following Page 52. Circle No. 748.

Small Air Compressor

City-operated repair and machine shops should be especially interested in the new ⅓-hp air compressor offered by THE DEVILBISS CO., 300 PHILLIPS AVE., TOLEDO, OHIO. The efficient unit provides economical compressed air for tire inflation, air dusting, cleaning and drying, and touch-up spray painting. It is also adequate for operating small pneumatic tools and devices.

The complete unit consists of a compressor, electric motor, and air tank. It is easy to install, and will operate from an ordinary electric lighting circuit, without special wiring. The automatic compressor starts when pressure drops to 120 pounds, and stops when the tank is full at 150 pounds.

Additional information, literature and prices may be obtained directly from the manufacturer, or you may use the Post Card on the insert following Page 52. Circle No. 773.

New Sales and Service Company

The sales and service operations for Byron Jackson pump products will be handled under the name of Byron Jackson Pumps, Inc., according to E. S. Dulin, president of the Byron Jackson Div., Borg-Warner Corp., P. O. Box 2017, Terminal Annex, Los Angeles 54, Calif. The new firm will maintain the same policies, personnel and locations with which Byron Jackson customers are

FROM THE WORLD'S FINEST DETECTION EQUIPMENT MANUFACTURERS

Let 1 instrument do all your work...

THE Dualtronic MODEL LC-5

Here is the instrument for which Municipalities have been looking... ONE instrument that locates Pipes, Leaks and Valves, yet costs no more. Model LC-5 not only saves you money but does the job accurately and dependably. Ruggedly constructed. Compact. Lightweight. Simple, one man operation. Model LC-5 is fully guaranteed.

plus these BIG features:

1. Use as Pipe Locator, Leak Detector, Valve Locator.
2. Pin-Point Detection.
3. Automatic on-off and power switching.
4. Crystal microphone.

The GOLDAK Company
Leading Electronic Manufacturers
Since 1933

1544 W. Glenoaks Blvd.
Glendale 1, Calif.

WRITE FOR COMPLETE BROCHURE

SAVE TIME AND MONEY WITH THIS COIN COUNTER

FAST ACCURATE DEPENDABLE

Your municipality cannot afford to be without an Abbott Coin Counter. This low priced machine will pay for itself in a matter of months with the time saved in the handling of coins. It counts and packages at the rate at 2500 coins per minute. Imagine how much you could save with one.

We offer a wide variety of coin counters with a model priced as low as $135 For the answer to **any** coin handling problem, come to a specialist. Write today for the Abbott money handling equipment catalog.

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COMPANY
144th Street and Wales Avenue
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A NEW CONCEPT FOR OFF-STREET PARKING

AUTOMATIC PARKING features...

- ★ **FLEXIBILITY OF CONTROLS**—Choice of exclusive coded "card-keys", coins, tokens or any combination.
- ★ **NO ATTENDANTS NEEDED**—Pays for itself.
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- ★ **SAFETY . . . DEPENDABILITY**

Write for descriptive literature.

PARCOA

Division of Johnson Fare Box Company

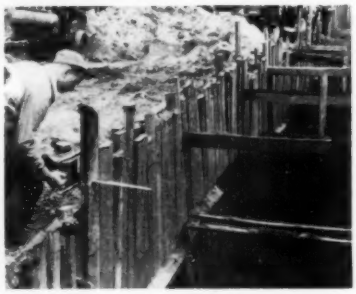
4819 N. Ravenswood Ave., Chicago 40, Ill.
Phone LOngbeach 1-0217
Sales and Service Offices in Major Cities listed under BOWSER, Inc.

Purchasing News

already familiar. Addresses and telephone numbers of headquarters and field offices will remain unchanged.

New officers of Byron Jackson Pumps, Inc., include E. S. Dulin, president; Robert Harcus, executive vice-president; N. D. Jesse, vice-president and manager of sales; and W. S. Thomas, vice-president, secretary and treasurer.

New, Lightweight Power Saw



Take the hard work out of water main, sewer and street construction jobs with the new Wright power saw. This lightweight, gasoline-powered unit is said to combine hand saw safety with power saw efficiency. It features reciprocating blade action, a special safety guard for the blade, and a safety cut-off switch with "one-finger" control.

The new power saw is designed to start and cut smoothly and easily without "grabbing" or "kicking." Its narrow guide and blade reduce pinching. Because the saw works efficiently from any angle—even upside down—it can saw effectively in all those "hard-to-get-at" places.

The Wright power saw is described and illustrated in literature from WRIGHT POWER SAW DIVISION, THOMAS INDUSTRIES, INC., LOUISVILLE 2, KY. Write directly, or you may use the Post Card on the insert following Page 52. Circle No. 745.

Cleans Catch Basins Quickly

N. P. Nelson Iron Works, Inc., is offering this efficient catch basin cleaner as a complete "package," ready for mounting on any municipal truck in

Cleans Parking Meters!

ZENITH

INSTRO-MET

The Only Cleaning Machine designed specifically for Parking Meters!

Complete with two gallons Cleaning Solution and three gallons Rinsing Solution — Only **$297.50** F.O.B., N.Y.C.

NOTE: For best results use Zenith Laboratory-Tested INSTRO-MET Cleaning and Rinsing Solutions!

Non-Toxic! - Non-Spotting! Non-Explosive!

$1.75 each per Gallon F.O.B. N.Y.C.

Order in Case Lots

USED BY MORE THAN 700 CITIES!
Endorsed by Leading Meter Manufacturers!

- **Cleans — Rinses — Polishes — Dries!**
- **Eliminates tedious hand work & service calls!**
- **Giant Basket — 7¾" inside x 3¾" deep!**
- **Removable small parts partition!**
- **Metal, non-breakable Tanks—10" diameter 10½" high!**

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YES! We Can Make Cores to Your Specification

We Rebuild—Repair —Refill All Makes and Sizes of Broom Cores.

Immediate Shipment

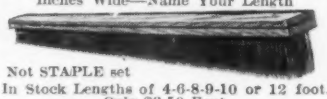
SUGGESTION—To Far-Away Users—Buy your NEW Cores only without any filling or we will furnish complete Palmyra-Hickory or Bass Fibre—Even Steel Wires.

Road Builders—It's Sensational!!

BIG PECKERWOOD BIG

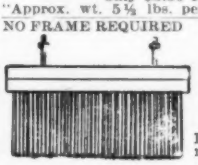
C-O-N-T-I-N-U-O-U-S

Steel Wire Road Drag Leveler, Six (6) Inches Wide—Name Your Length



Not STAPLE set
In Stock Lengths of 4-6-8-9-10 or 12 foot.
Only $3.50 Foot
"Approx. wt. 5½ lbs. per ft."

NO FRAME REQUIRED



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3" Wide, 15" Length
This Fits Your Frame
NOTE—Both Drags Can Be Furnished with Fibre.
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Since **VAN BRUSH MFG. CO., INC.** 1928
327 Southwest Blvd., Kansas City, Mo.

less than 30 minutes. Only four double-bolt assemblies are needed to mount the cleaner. Once installed, it is ready for fast, economical operation at maximum efficiency.

An important feature of the catch basin cleaner is its hydraulic bucket action with a power controlled boom for raising and swinging. All operations can be performed simultaneously. The entire digging, swinging and loading cycle is easily completed in 30 seconds, and all operating controls are centralized in the cab.

For a detailed description of the Nelson catch basin cleaner, write N. P. NELSON IRON WORKS, INC., CLIFTON, N. J., or you may use the Post Card on the insert following Page 52. Circle No. 751.

New Pipe Vise

Especially designed to hold asbestos cement and clay pipe, the new Gravity Grip pipe vise, Model V-20, keeps the pipe at a convenient working height and angle, and provides steady and complete control. The low-cost vise is quickly adjusted to hold pipe ranging from four to 20 inches in diameter. It may be used with all Spring Load pipe cutters, machining and tapering tools, and will work equally well with similar tools from other manufacturers.

The new Model V-20 pipe vise weighs 48 pounds, and costs only $44.75. It is available from the SPRING LOAD MFG. CORP., 3610 FIRST AVE. SOUTH, SEATTLE 4, WASH.

For additional data, write the manufacturer directly, or you may use the Post Card on the insert following Page 52. Circle No. 754.

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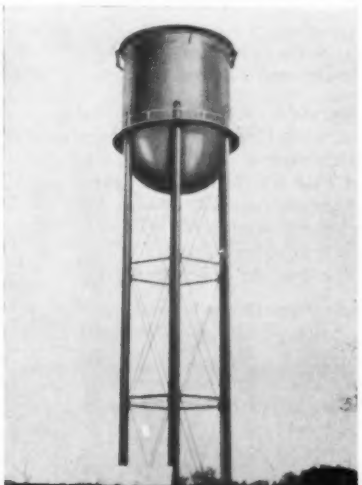

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Selecting the most effective sign for a specific traffic problem is half the solution... and Lyle, headquarters for official traffic signs (and custom-built signs, too) can help with professional guidance. A complete line of signs and accessories for cities, counties, states and contractors. Write for catalog.

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Street lighting maintenance is only one of many uses for St. Joseph's aerial ladder

LELAND L. HILL

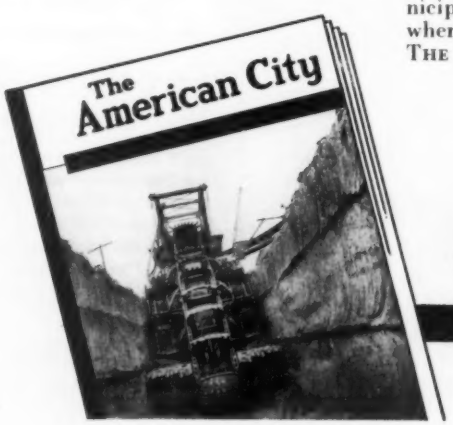
VERSATILITY COUNTS WHEN ST. JOSEPH BUYS MUNICIPAL EQUIPMENT

THE PRICE TAG on your product isn't the only factor in City Manager Leland L. Hill's mind when he makes purchasing recommendations in St. Joseph, Michigan. He always tries to find equipment that can be used by several different departments.

Recently Mr. Hill saw an aerial ladder ad in THE AMERICAN CITY. He realized that the street and parks departments could cut costs using this versatile product, while it would also help the fire department train its men in ladder-climbing. After consultation with the Director of Public Works and the Parks Superintendent, Mr. Hill went to the City Commission, which approved his purchasing recommendation.

"In keeping up-to-date on new methods and equipment for all of our departments," says Mr. Hill, "I have to do a good deal of reading. In this respect I find THE AMERICAN CITY *quite valuable in helping me coordinate the work for our municipal operations here in St. Joseph. In fact, I have been a regular reader of* THE AMERICAN CITY *for the past 20 years or more."*

What is your product's primary advantage—versatility, quality, price — maybe all three? Your story will be read by thousands of municipal engineers and managers like Mr. Hill, when you invest your advertising dollars in THE AMERICAN CITY.



The American City

470 Fourth Avenue, New York 16, N. Y.

About People

William Arthur Johnson, 71, chairman of the board of directors of the **American Pipe & Construction Co.** and the **Amercoat Corp.**, both of South Gate, Calif., died of a heart attack recently at his home in Balboa, Calif. Mr. Johnson was also chairman of the board of Pipe Linings, Inc., Wilmington, Calif., and Johnson Western Constructors, San Pedro, Calif. He was one of the deans of the U. S. construction industry and a leader in California's business life for more than 50 years.

Latest addition to the sales staff of **Four Wheel Drive Auto Co.**, Clintonville, Wis., is Louis A. Wehde, new assistant sales manager. Mr. Wehde was formerly midwest zone manager for the Dodge Bros. Corp., and has also been a zone manager for the Hudson Motor Car Co.

When the **Graver Water Conditioning Co.**, 216 W. 14th St., New York City, opens its new sales-service office in Boston, Mass., the office will be headed by William A. Homer, according to a recent announcement. The new office will be located at Room 707, 6 Beacon St., Boston.

Arthur A. and Sidney N. Shurcliff, landscape architects and town planners, 14 Beacon St., Boston 8, Mass., announce the addition to the firm of Vincent N. Merrill. The new firm name will be **Shurcliff, Shurcliff & Merrill.**

Five new members have been elected to the board of directors of **Fay, Spofford & Thorndike, Inc.**, a well-known Boston engineering firm located at 11 Beacon St. The new directors include Burdette K. Beebe, Fozi M. Cahaly, Harold H. Jones, Edward C. Keane, and Leon B. Turner.

From **The Gamewell Co.**, Newton Upper Falls, Mass., comes news of a new chief engineer, Edward S. Ruth, to succeed the recently-resigned Frank R. Bridges. Mr. Ruth served for many years as director of Research Engineering and Development for the Edwards Co., Inc., of Norwalk, Conn.

Malcom Pirnie Engineers, located at 25 W. 43rd St., New York 36, N. Y., announces the appointment of a new associate, Alfred C. Leonard. Mr. Leonard has been with the firm since 1949.

Wesley C. L. Hemeon, engineering director of the Industrial Hygiene Foundation and senior fellow of the Mellon Institute, has resigned his present position to become director of **Hemeon Associates,** a new consulting firm for air pollution. The firm will be located in the Loeffler Bldg., 121 Meyran Ave., Pittsburgh, Pa. Heading a staff of specialists in various aspects of air pollu-

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FULL FIRE APPARATUS LINE

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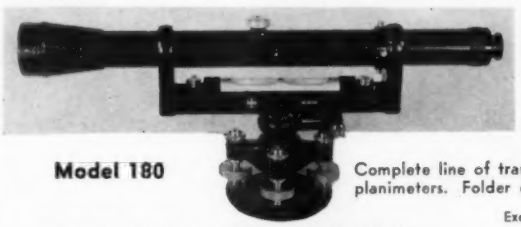
UMECO 18" Dumpy Level only $270.



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Just Right for Your City
in SIZE . . . in VERSATILITY . . . in PRICE

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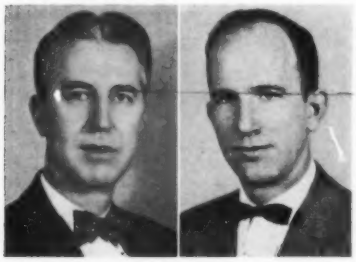
MINIATURE TRAIN CO. Rensselaer, Indiana

tion will be George F. Haines, Jr., new chief engineer. Mr. Haines is also at present a fellow of Mellon Institute. Consulting associates will include Maynard S. Smith, of the Brookhaven National Laboratory; Professor J. K. Cholak, of the Kettering Laboratory, College of Medicine, University of Cincinnati; and Professor Gordon Strom, Department of Aeronautical Engineering, New York University.



W. C. L. Hemeon **C. F. Haines, Jr.**

Succeeding G. Y. Murray as manager of the Solids Pump Division, **Western Machinery Co.,** 760 Folsom St., San Francisco, Calif., is W. E. Galland, according to a recent announcement. Mr. Murray is scheduled to head western sales for the W.K.E. Division of the company.

New national sales manager of **Motorola Communications and Electronics, Inc.,** 4501 W. Augusta Blvd., Chicago 51, Ill., is Harold A. Jones, former executive assistant to the national sales manager. Mr. Jones will be responsible for implementing sales policy and for executing sales planning and promotion.

News from the **Joy Mfg. Co.,** Henry W. Oliver Bldg., Pittsburgh 22, Pa., informs us of the recent appointment of John P. Cartwright as sales manager of Industrial Sales. Mr. Cartwright is the former manager of Joy's Washington district office. He is succeeded in the Washington office by Arnott J. Lee.

James V. Cawley has been named staff sanitation consultant for **Airkem, Inc.,** 241 E. 44th St., New York 17, N. Y., according to Frank W. Conkling, vice-president. Mr. Cawley is the former editor of *Modern Sanitation Magazine.*

Daniel S. Heffron, director of sales for the **"Quick-Way" Truck Shovel Co.,** Denver, Col., announces the appointment of Theodore S. Peterson as assistant sales manager. Mr. Peterson has been with "Quick-Way" since 1955, last serving as district sales representative for the States of California, Nevada and Arizona. He will be succeeded as sales representative by Douglas Corner, Jr.

T. S. Peterson

R. F. Hendren, manager of plants for the **Chicago Bridge & Iron Co.,** 332 S. Michigan Ave., Chicago 4, Ill., was recently elected a vice-president of the firm. Mr. Hendren has been a director of Chicago Bridge & Iron since 1946, and manager of plants since 1947.

As new regional manager of the Western Division, **Aeroil Products Co.,** South Hackensack, N. J., Charles E. Klevies will be responsible for sales and service in the 11 western states, and will have charge of operations at the company's Los Angeles branch office. His headquarters are at 3217 Union Pacific Ave., Los Angeles, Calif.

Bert Nelson, manager of the Fire Apparatus Division, **Mack Trucks, Inc.,** 350 Fifth Ave., New York 1, N. Y., announces the appointment of John G. Caley as head of the company's Southern Division Fire Engine Department. Mr. Caley is also division manager of national accounts for Mack Trucks.

Wesley Bintz, of 301 S. Washington Ave., Lansing, Mich., a well-known consultant in swimming pool design, has been named acting head of a newly-established national swimming pool association. The new organization, reports Mr. Bintz, was formed "to standardize health and sanitation regulations pertaining to pools and to pool construction and design requirements." An official name for the association will be selected at a national meeting.

Wesley Bintz

Scheduled to manage development engineering for **Maintenance, Inc.,** Wooster, Ohio, is Robert B. Snider, a former member of Borg-Warner Corporation's new products' division. Mr. Snider will supervise application engineering procedures of Jennite J-16, a protective coating for parking lots, airfields, and other asphalt surfaces.

Joseph M. Young, former field sales engineer for **Infilco, Inc.,** in the Southwest area, has been transferred to the company's headquarters in Tucson, Ariz. He is succeeded in the Southwest by Lee Hiser. Mr. Hiser will make his headquarters in Houston, Tex.

When the **Line Material Co.,** 700 W. Michigan St., Milwaukee 1, Wis., opens its new sales office and warehouse in Spokane, Wash., W. F. Smith, division manager of the company's Mountain States Division, will make his headquarters there. R. A. Balch, field engineer; T. J. Chapman, lighting engineer; and C. J. Carter, fibre products engineer, will also operate out of the new facility. Warehouse activities will be handled by P. K. Christiansen, branch supervisor. Line Material has also appointed a new field engineer, Maury A. Babin, for its Houston (Tex.) office.

From **Dorr-Oliver, Inc.,** Stamford, Conn., we learn of the promotion of Albert L. Morris to the new post of director of company relations. With the retirement of William Harold Oliver as vice-president for public relations and personnel, Mr. Morris assumes over-all responsibility for public relations and personnel functions. He has been director of Dorr-Oliver public relations for the past year, and previously held the posts of advertising manager and assistant director of public relations and personnel.

Joseph Doucet will represent the **Neptune Meter Co.,** 19 W. 50th St., New York 20, N. Y., in Central California, according to Henry Horandt, Western Coast manager for Neptune. Mr. Doucet will be in charge of the sale of water meters to municipal and private utilities.

Promotion of key sales personnel is announced by Lloyd A. Dixon, Jr., vice-president of the Meter and Valve Division, **Rockwell Mfg. Co.,** 400 N. Lexington Ave., Pittsburgh 8, Pa. Gilbert T. Bowman, general products manager, and J. W. Northcutt, southern regional sales manager, have been named assistant vice-presidents. Both men will make their headquarters in Pittsburgh. Jack W. Walters, product manager of petroleum and industrial liquid meters, will move to Rockwell's southern regional headquarters in Atlanta, Ga., to succeed Mr. Northcutt.

As manager of valve operations for the **S. Morgan Smith Co.,** York, Pa., Carl J. Wilcox will be in charge of divisional sales, engineering and manufacturing functions. Mr. Wilcox joined the firm in 1941, last serving as manager of S. Morgan Smith valve sales.

From S. R. Ives, president of **Armco Drainage & Metal Products, Inc.,** Middletown, Ohio, we learn of the appointment of C. A. McTaggert as manager of the company's Northwestern Division. James Sampson has been named Northwestern division sales manager, and Robert M. Clementson is sales manager for the State of Pennsylvania.

W. J. Bornholdt, managing director of Caterpillar Tractor Co., Ltd., British subsidiary of the **Caterpillar Tractor Co.,** Peoria, Ill., announces the appointment of G. Geoffrey Deakin as marketing manager. U. S. Caterpillar recently expanded the subsidiary to include a factory at Glasgow for the manufacture of "Cat" crawler tractors.

G. G. Deakin

YOU BUY *Silent* OPERATION

When you buy Progressive AMERICAN METERS

The quiet operation of American Meters . . . year after year, builds customer satisfaction. This whisper-quiet performance results from simplicity of design that eliminates metal-to-metal clicking noise in the measuring chamber. Water departments using American Meters are not troubled with nuisance calls about noisy meters. Silent operation comes naturally to an American Meter. It is the result of research and advanced engineering covering more than 60 years of meter-building experience. Keep your customers and your service department happy . . . Buy American.

BUFFALO METER CO.
2902 Main Street Buffalo 14, New York

Here's truly streamlined cash control equipment you're proud to show them!

Burroughs Receipting and Validating Machine. Speeds and assures accuracy three ways: gives the taxpayer a machine-certified receipt; validates, automatically, the exact amount received by cashier; simultaneously enters identical record on locked-in journal.

Proud? Even more—you'll be really eager to show them the Burroughs Receipting and Validating Machine. For it (like all Burroughs machines) not only looks the part of the most efficiently run, up-to-date city government, but plays this part well! Here's why:

The protection and double-quick service you and your citizens expect is built right into *this* cash control machine. Yes, from the ground up, it's designed for speed and foolproof accuracy.

Unlike old-fashioned manual receipting devices, it mechanically enforces correct accounting for monies as they're received. Protects the cashier against honest mistakes. And assures the taxpayer that he will receive full credit for his payment.

Remember, there's no better way to gain confidence than at a point of frequent contact between you and the taxpayer. Here's where you should insist on Burroughs! Call our nearest branch office for a demonstration, soon! Or write: Burroughs Corporation, Detroit 32, Michigan.

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The American City

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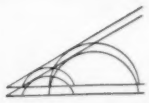
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How Yuma gets rid of its trash

The old dump for the City of Yuma, Arizona, was not only an eyesore but a breeder of vermin. Today, thanks to sound planning by City Engineer Mulford Winsor, Jr., and the dependable performance of a Caterpillar HT4 Traxcavator*, refuse disposal has become a civic asset instead of a liability.

Sanitary landfill is not new, but each city adopts it to solve its own problems. In some cases the "area" method is preferred. Yuma uses the "trench and fill" system. The HT4 digs a long trench, some 20 ft. wide and 10 ft. deep. Refuse, brought by the city's 6 trucks, is dumped into the trench, compacted by the Traxcavator, then covered with 2 ft. of clean earth. This process goes on until the trench is filled. No smoldering fires. No rats or flies. The completed section can be planted for park or playground use, or opened for building.

The CAT* HT4 Traxcavator, says Mr. Winsor, has proved a very satisfactory and economical tool for the job.

Now available in the Caterpillar line are 3 new Traxcavators, all ideal units for sanitary landfill: The No. 933 with 1-yd. capacity, the No. 955 with 1½-yd. capacity, and No. 977 with 2¼-yd. capacity. They have superior digging and lifting action and easy maneuverability. All have the new oil-type clutch that lengthens clutch life and minimizes maintenance. Another important feature is 40-degree bucket tilt-back at ground level, assuring a full load at every pass.

Yuma's HT4 Traxcavator is one of nearly 1000 Caterpillar-built machines now capably handling sanitary landfill assignments throughout the world. In the complete Caterpillar line of Traxcavators, bulldozers and scrapers, there is a size and type to match your community's needs.

Your Caterpillar Dealer is equipped to help plan your sanitary landfill and to suggest machinery to fit your disposal problems. See him today.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Caterpillar, Cat and Traxcavator are Registered Trademarks

MODERN HEAVY-DUTY EXCAVATING EQUIPMENT

MARK-TIME manual Parking Meters are Big *Money Makers*

SMARTER APPEARANCE

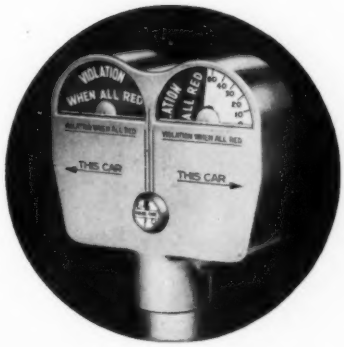
LOWEST OVERALL COST

ENGINEERING ADVANTAGES

LONGER LIFE

Every parking meter in itself is a money *collector* but few have been proven, as has Mark-Time, to be money-*makers*. The big difference is in the maintenance . . . because so many meters take back in maintenance cost a good proportion of the money they collect.

These features: famous sealed mechanism that *does not* require weekly clockwinding; magic link that saves so much damage to meter parts and the sealed coin box for guaranteed protected collections —make Mark-Time the *Best* REVENUE PRODUCING Parking Meter to install.



Simple in design, rugged in assembly the Mark-Time "Hurricane" Manual Parking Meter is built to withstand the hardest usage in every kind of weather and condition of service . . . It's *always* on the job!

Specify Mark-Time for your *next* installation.

MARK-TIME

M. H. RHODES, INC. Hartford 6, Conn.

Manufactured and Sold in Canada by: SPERRY GYROSCOPE OTTAWA Ltd., Ottawa, Ontario, Canada

One Michigan replaces two crawlers and grader . . .

Clean-up costs threatened profits until Calif. contractor bought this 2¼ yd. Michigan

Due to the nature of the job specifications, excavating contractor Kirby-Erwood Co. (Van Nuys, Cal.) faced a substantial clean-up problem in adding two outside lanes to the Foothill Freeway in southern California. Recognizing the advantages of a single machine with speed and power to keep clean-up costs from getting out of hand, they asked distributor Smith Booth Usher to demonstrate a 2¼ yd. Michigan Tractor Shovel. When they saw, they bought.

Tough specifications

To keep traffic moving, State specifications called for at least a ½-mile of wide-open, uninterrupted highway free of all construction activities any time Kirby-Erwood switched work from one side of the highway to the other. Still, it was often necessary to work alternate sides of the highway because of timing as utilities were moved.

There was excess excavation as each section was temporarily and permanently completed—broken concrete from old structures and large boulders dug up by excavating equipment. To meet the specifications under these conditions, clean-up work had to be fast and highly productive.

Using a length of chain, the Michigan operator easily broke loose this 2-ton chunk of concrete, carried it 2 miles to the dump.

Michigan replaces crawlers

The 27-mph Michigan has replaced two crawler-loaders on clean-up. In many sections the Michigan does its own grading and scarifying of old bituminous shoulders, eliminates considerable grader work. The Michigan travels along a pavement at high speed, picks up boulders and cobbles which formerly had to be gathered and windrowed by a grader and loaded by the crawlers. In terms of economy, the Michigan operator *does the work of two crawler operators and much of the work of a grader operator.*

How to cut costs

Kirby-Erwood's Michigan does more than help them meet job specifications: it cuts many dollars of expense from this $612,000 freeway project. By handling clean-up work efficiently, the Michigan prevents this expense item from eating into job profits.

With Clark torque converter, powershift transmission and planetary-wheel axles standard on all models, Michigans deliver more usable power, traction and speed than any machine of this type. If you're willing to be convinced that this machine is in a class by itself, do what Kirby-Erwood did; *ask for a demonstration.* You name the job!

Michigan is a registered trade mark of

CLARK EQUIPMENT COMPANY
Construction Machinery Division
2495 Pipestone Road
Benton Harbor 22, Michigan

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